

REPORT
ON THE
HEALTH OF THE BOROUGH
OF
BIRMINGHAM,
FOR THE YEAR 1880,

ALSO,

ON THE PROCEEDINGS TAKEN UNDER THE ACT FOR THE
PREVENTION OF ADULTERATION
OF ARTICLES OF FOOD AND DRINK,


BY
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MEDICAL OFFICER OF HEALTH'S DEPARTMENT,
THE COUNCIL HOUSE,
Birmingham, March 15th, 1881.
TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

I have the honour to submit to you my Report for the year 1880, and have the satisfaction of being able to congratulate you and the town on the continued improvement in the Health of the Borough, as shown in both the diminished total Death-rate and the smaller prevalence of all the Zymotic diseases except Diarrhœa.

For the year 1879 it was my agreeable duty to report a lower Death-rate than had been known in the Borough during the preceeding fourteen years; I have now to announce a still further decline in the mortality, which marks the year 1880 as the most favourable one in the sanitary history of the Borough during the last sixteen years, the period over which only any such statistics are at command.

I. VITAL STATISTICS.

The *Population* of the Borough at the middle of 1880, as estimated by the Registrar General upon the basis of the 1871 Census, was 394,738.

The excess of Births over Deaths shows what is called a natural increase in the population during the year 1880, of 7,023, so that had the number of persons leaving the town been equal to that of persons coming into it during the year, the annual rate of increase of population for the year would have been 1·8 per cent. The estimated increase is only 5,854, equal to 1·5 per cent. This large population is distributed more or less unequally over an *Area* of 8,400 acres, the number of persons per acre thus being 47·0, as compared with 42·4 in 1873, the first year of my Reports, when the death-rate was much higher. It has been clearly established that increased density of population is accompanied by increased sickness and mortality, that is to say, when the surrounding conditions remain the same; but since 1873, in spite of an addition to the population of 4·6 persons to each acre, the health of the Borough has, in opposition to the usual result, been improved, and there can be no doubt that the reversal of this natural law is due to the changes for the better which have been effected in the sanitary conditions of the town.

The statement below contains an estimate of the population at the middle of 1880, the number of persons to an acre, and the total death-rate in some of the large towns of the Kingdom in the year under notice.

	Estimated Population, 1880.	No. of Persons per Acre.	Death-rate.
London	3,664,149	48·6	22·2
Liverpool... ..	544,056	104·4	27·3
Birmingham ...	394,738	47·0	20·5
Manchester	363,130	84·6	25·4
Sheffield	304,938	15·5	21·1
Leeds	318,929	14·8	21·0
Salford	185,786	35·9	25·9
Newcastle-on-Tyne	149,366	27·8	22·0
Norwich	85,827	11·5	24·7
Glasgow	589,598	97·7	22·6
Dublin	314,666	31·3	36·1

In speaking of the number of persons per acre in a large community it must not be forgotten that such number is only an average, and does not represent the persons living on each individual acre; for instance, the number of

persons on an acre in Ladywood Ward is much greater than on the same area in Edgbaston Ward, and the difference of density of population between Deritend and some parts of Bordesley Ward is quite as marked. Nevertheless, although the distribution of the population in a town be not equal, a knowledge of average numbers is of great use for purposes of comparison, whether of the different periods in the history of the same town or of different towns.

The *Elevation* of the Borough, or its height above the level of the sea, varies from 310 feet to 600 feet. This lofty position is generally a considerable advantage, particularly when conjoined, as it is in Birmingham, with a porous soil.

MARRIAGES.

The number of Marriages in the Borough during the year was 3,304; this is equal to a rate of persons married per 1,000 of the population of 16·7. The number of Marriages in the Parish of Birmingham for the same year was 2,100, equal to a rate of persons married per 1,000 of the population of the Parish of 16·9. It thus seems that the proportion of persons married to population is about the same both in the Borough and the Parish of Birmingham, and that the one is therefore a fair indication of the other. As there are difficulties in the way of getting the Returns for the Borough I give those for the Parish for the previous ten years. These have been kindly supplied to me by Mr. Cooper, Superintendent Registrar.

		Marriages in the Parish of Birmingham.										
Year ...		1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880
No. of Marriages ...		2,230	2,370	2,488	2,498	2,315	2,520	2,521	2,395	2,100	2,052	2,100
Rate per 1,000 of												
the Population ...		19·5	20·5	21·6	21·7	19·5	21·1	20·8	19·7	17·0	16·6	16·9

The

BIRTHS

registered during the year number 15,111, against 15,846 in 1879, 15,964 in 1878, and 16,001 in 1877. The total numbers of each sex for every quarter since the beginning of 1873 are to be found in the following statement:—

1873.		1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.	Birth Rate.
Total	...	3,741	3,564	3,378	3,814	14,497	40·78
Males	...	1,892	1,783	1,715	1,950	7,340	
Females	...	1,849	1,781	1,663	1,864	7,157	
1874.							
Total	..	3,814	3,871	3,493	3,710	14,888	41·25
Males	...	1,953	1,961	1,753	1,853	7,520	
Females	...	1,861	1,910	1,740	1,857	7,368	
1875.							
Total	...	3,787	3,737	3,581	3,757	14,862	40·57
Males	...	1,929	1,884	1,815	1,904	7,532	
Females	...	1,857	1,853	1,766	1,853	7,329	
Sexless	...	1	—	—	—	1	
1876.							
Total	...	4,140	3,924	3,803	3,949	15,816	42·53
Males	...	2,045	1,996	1,959	2,028	8,028	
Females	...	2,095	1,928	1,844	1,921	7,788	
1877.							
Total	...	4,296	4,009	3,769	3,927	16,001	42·39
Males	...	2,139	2,015	1,878	2,037	8,069	
Females	...	2,157	1,994	1,891	1,890	7,932	
1878.							
Total	...	4,139	4,096	3,849	3,880	15,964	41·67
Males	...	2,160	2,051	1,962	1,982	8,155	
Females	...	1,979	2,045	1,887	1,898	7,809	
1879.							
Total	...	4,124	3,912	3,723	4,087	15,846	39·98
Males	...	2,086	1,992	1,878	2,096	8,052	
Females	...	2,038	1,920	1,845	1,991	7,794	
1880.							
Total	...	3,964	4,104	3,572	3,471	15,111	38·28
Males	...	2,023	2,100	1,762	1,802	7,687	
Females	...	1,941	2,004	1,810	1,669	7,424	

Thus not only does the Birth-rate continue to undergo diminution, being for the year 1880 only 38·28 per 1,000 persons living as compared with 39·98 in 1879, 41·67 in 1878, and 40·37 the average of the ten years 1870-79 ; but notwithstanding the increase of population, the gross number of Births has undergone a progressive annual decline during the last four years. This decline is not peculiar to Birmingham, it is shared in by the whole of England and Wales, in which the birth-rate has steadily declined for the last four years ; it is doubtless accounted for by the depression which trade has experienced.

The subjoined statement shows that the Birth-rate of Birmingham always high compared with similar towns is still higher than in the other large towns given below, except Liverpool, which it equals. It represents the Birth-rate per 1,000 of the Population.

London.	Liverpool.	Birmingham.	Manchester.	Leeds.	Sheffield.	Newcastle	Norwich.	Average of 20 large Towns.
36·2	38·3	38·3	35·3	35·7	35·3	35·7	34·5	36·1

VACCINATION.

From the returns furnished me for the year ended June 30th, 1880, it appears that the Births of 9,603 children were registered in the Parish of Birmingham, and of these 8,281 or 86·2 per cent. were vaccinated with success, 927 died unvaccinated, and 285 or nearly three per cent. of the remainder were removed from the Parish and were consequently beyond the control of the Vaccination Officers of the Parish. The remaining children were either insusceptible of vaccination, had been removed to other districts, the Vaccination Officer of which had been apprised, or their vaccination had been postponed on medical grounds. In that portion of the Parish of Aston within the Borough, 5,583 births were registered during the same period, and 4,539 children or 81·3 per cent. were successfully vaccinated, 519 or 9·3 per cent. remaining unvaccinated at the close of the year, chiefly owing to removal from the district to localities unknown, while in the Borough portion of Edgbaston Parish the births registered in the same period of time numbered 488, of which 403 or 82·6 per cent. were successfully vaccinated.

These particulars are fully set forth in Table XVI. I am indebted for these statistics to Mr. Wilcox, Vaccination Officer for the Parish of Birmingham ; Mr. Stephens, Vaccination Officer for the Parish of Aston ; and Mr. E. Docker, Vaccination Officer for the Parish of Edgbaston.

The returns are the same as those supplied to the Local Government Board, and do not coincide with the registration year owing to the impossibility of satisfactorily accounting for the vaccination of any child till at least three months after its birth.

DEATHS.

The Deaths registered in 1880 amount to 8,088 as compared with 8,650 in the previous year, and 8,845 the average of the ten years 1870-79.

The number of Deaths of Males is 4,230, of Females, 3,858. The Death-rate per 1,000 persons living for the year under notice is only 20·49, or to express the fact in another manner out of about forty-nine persons living, one died during the year. This is not only a much lower rate than the average for the previous decade, which is 24·04, but lower by more than one per 1,000 than in any previous year which my records embrace, and 3·86 lower than the average Death-rate of the preceding fifteen years. It is also lower than that of England and Wales for the year, which is 20·7, and shows a decline from the rates of the two preceding years. The Death-rates for the eight years 1873-4-5-6-7-8-9 and 1880, during which I have held my present office, are 24·8, 26·8, 26·3, 22·4, 23·9, 25·2, 21·8, and 20·49 respectively. The high

figures of 1874 and 1878 were the result of very extensive and severe visitations of Scarlet Fever, associated in 1874 with Small Pox, but even here there is cause for satisfaction in finding that the Death-rate in the latter year was very distinctly less than in the former, apparently indicating that sanitary measures had begun to exercise a mitigating influence on the fatality of epidemic disease, and are steadily effecting a more or less regular improvement of the public health. The lower Death-rate of the year 1880 is equal to the actual saving of 562 lives on the Death-rate of 1879, no corrections being made for either growth of population or increase of density, which would materially raise the figures. This is no contemptible result of improved sanitary condition, it means not only the saving of so many lives, but it carries with it the obviation of much illness of a non-fatal kind, much suffering, heavy expense, physical disability, and a loss to the state calculated on Dr. Farr's estimate that the value of every living person is £159, of £89,000. If the number of lives saved by the lower mortality of 1880, compared with that of 1878, viz.: 1,574, be taken into account, the money saving on the above estimate amounts to the large sum of £250,000, an amount largely in excess of any expenditure likely to be made in sanitary improvement, and amply justifying the sanitary measures which your Committee has for some time been actively prosecuting.

The satisfactory reduction in the Death-rate of 1880 is due to various causes—

- 1.—The non-occurrence of any serious epidemic of Small-pox, Scarlet Fever, Measles, or Whooping Cough.
- 2.—The absence of marked distress on the one hand, or of a too flourishing state of trade, leading to intemperance and excess, on the other.
- 3.—The cheapness of the necessaries of life.
- 4.—The mild weather at the latter end of the year; and
- 5.—The Sanitary measures taken by the Corporation.

When the Registrar General's Report shall appear the Death-rate will be stated somewhat higher than I have calculated it. This result will be brought about by the circumstance of the Deaths of Paupers from Birmingham dying in the King's Norton and Erdington Workhouses being included with those of the Borough. This classification, in one sense, is quite right, but when it is remembered that no correction is made for persons coming into the Borough, particularly into its Institutions, and dying there, who do not belong to it, it is plain that our Death-rate is made to appear higher than it actually is.

The following Table furnishes the estimated population, number of persons per acre, the total numbers of Registered Births and Deaths, as well as the Birth and Death-rates for each year since 1864 :—

Population of the County of Essex, from 1865 to 1880, each year since 1865.											
Year.	Population Estimated in the middle of each year.		Density. Persons per acre.		Births.		Deaths.		Annual Rate to 1,000 living		
									Births.	Deaths.	
1865	The Estimate of Population in these years is not to be relied on.	{	—	...	12,699	...	8,014	...	38·87	24·5	
1866			—	...	12,877	...	8,042	...	38·48	24·0	
1867			—	...	13,029	...	8,318	...	38·01	25·6	
1868			—	...	12,992	...	8,548	...	36·31	25·9	
1869			—	...	12,779	..	7,737	...	35·53	23·1	
1870			—	...	12,922	...	7,805	...	35·00	23·0	
1871	...	344,980	...	41·1	..	13,443	..	8,594	...	39·00	24·9
1872	..	350,164	...	41·7	...	14,123	...	8,048	...	40·50	23·1
1873	...	355,540	...	42·4	...	14,497	...	8,990	...	40·78	24·8
1874	...	360,892	...	43·0	...	14,888	..	9,665	...	41·25	26·8
1875	...	366,325	...	43·6	...	14,862	...	9,668	...	40·57	26·3
1876	...	371,839	...	44·3	...	15,816	...	8,330	...	42·53	22·4
1877	...	377,436	...	44·9	...	16,001	...	9,038	...	42·39	23·9
1878	...	383,117	...	45·6	..	15,964	...	9,662	...	41·67	25·2
1879	...	388,884	...	46·3	...	15,846	..	8,650	...	39·98	21·8
1880	...	394,738	...	47·0	...	15,111	...	8,088	..	38·28	20·5

As it is interesting as well as instructive to know the Death-rates of other large towns similar to Birmingham, I give below a statement which records the Death-rate per 1,000 of the inhabitants of this Borough and of the principal large towns for the present and the seven preceeding years :—

DEATH RATE PER 1000 PERSONS LIVING.

Average of 20 large English Towns.				London	L'pool.	Birm.	Manch.	Leeds.	Sheff'd.	Salford	Newestl.	Norw'h.
1880	..	22·6	...	22·2	27·3	20·5	25·4	21·0	21·1	25·9	22·0	24·7
1879	...	23·2	...	23·3	27·1	21·8	26·9	22·6	21·3	24·9	23·6	22·0
1878	...	24·4	...	23·5	29·4	25·2	27·9	23·8	25·0	25·6	23·8	24·6
1877	...	22·8	...	21·9	26·5	23·9	27·4	22·3	21·9	25·1	22·4	21·0
1876	...	23·6	...	22·3	27·6	22·4	29·2	25·1	24·3	31·9	22·8	21·9
1875	...	25·4	...	23·7	27·5	26·3	29·9	26·4	24·8	31·5	26·1	24·5
1874	...	25·4	...	22·5	32·0	26·8	30·4	28·7	26·9	29·6	29·2	23·5
1873	...	24·4	...	22·5	25·9	24·8	30·1	27·6	25·8	29·3	30·1	21·5

In the statement below is given the number of Deaths of each sex, and the Death-rate for each quarter of the year, together with the total for 1880 and the four preceding years :—

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total 1880	Total 1879	Total 1878	Total 1877	Total 1876
Total ...	2,207	1,892	2,127	1,862	8,088	8,650	9,662	9,038	8,330
Males ...	1,124	1,041	1,103	962	4,230	4,500	5,086	4,745	4,390
Females ...	1,083	851	1,024	900	3,858	4,150	4,574	4,292	3,939
Sex not known	—	—	—	—	—	—	2	1	1
Death-rate ..	22·36	19·17	21·65	18·87	20·49	21·82	25·20	23·95	22·40

The Deaths have been distributed among the eight Registration Sub-Districts during this and the three preceding years, as follows :—

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total 1880	Total 1879	Total 1878	Total 1877	Death-rate 1880
Ladywood ...	258	217	233	184	892	1,026	1,154	950	17·2
St. Thomas	247	168	216	178	809	887	909	880	19·2
St. Martin's	261	173	227	209	870	868	1,070	996	20·1
St. George's	369	362	404	318	1,453	1,649	1,823	1,735	21·1
All Saints' ...	346	354	329	330	1,359	1,484	1,603	1,571	30·9
Deritend ...	350	350	381	362	1,443	1,394	1,552	1,437	21·1
Duddeston ...	302	214	279	229	1,024	1,071	1,260	1,239	19·1
Edgbaston ...	74	54	58	52	238	271	291	230	10·5

A comparison of the figures for 1879 and 1880 shows that the number of deaths has diminished in each of the Registration Sub-Districts except those of St. Martin and Deritend. The reduction has been proportionately greatest in Ladywood and St. George's.

If, however, all the deaths that have taken place in the Institutions in the Borough, excluding the Workhouse, be eliminated, the death-rate would only be 19·2, and if those that have occurred in the Workhouse be also disregarded, the death-rate would be reduced to 18·0.

In the same way, by discarding the deaths in the General Hospital, which are included in the returns for St. George's Registration Sub-District, the death-rate for that Sub-District would appear as 17·9, instead of 21·1 as it now does, and that of All Saints' Sub-District, by excluding the deaths registered as having taken place in the Gaol, Asylum, Borough Hospital, and Workhouse, would undergo a reduction from 30·9 to 17·4.

A subtraction of the deaths in the Children's Hospital from the total of the Ladywood District, brings down the death-rate of that district from 17·2

to 16·1, while the death-rate of St. Thomas' Sub-District, if the deaths in the Queen's Hospital be not counted, is really 16·0.

The under-mentioned statement enumerates the deaths in each of the sixteen Wards of the Borough for each quarter of the year :—

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.
Rotton Park (W., B.H.)	252	243	229	228	952
All Saints (L.)	133	148	178	143	602
Ladywood (H.)	151	107	103	98	459
St. Paul	100	86	83	70	339
St. George	114	100	132	97	443
St. Stephen	106	98	111	81	396
St. Mary (H.)	190	141	171	152	654
St. Bartholomew	143	131	159	137	570
Market Hall	98	72	74	70	314
St. Thomas (H.)	154	141	144	125	564
St. Martin	140	89	130	92	451
Edgbaston	93	59	71	62	285
Deritend	125	128	144	150	547
Bordesley	161	174	159	155	649
Duddeston	112	84	114	105	415
Nechells	135	91	125	97	448

The Death-rates in the various wards cannot be calculated because of their population not being known.

The subjoined Table gives the number of Deaths at stated aetal periods for each quarter of 1880, together with the totals for that and the two preceding years :—

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total 1880.	Total 1879.	Total 1878.
Under 1 year of age	608	543	932	518	2,601	2,385	2,768
Between 1 and 5 years	391	341	389	321	1,442	1,710	2,262
" 5 " 10 "	70	63	53	58	244	311	522
" 10 " 20 "	72	59	54	59	244	254	322
" 20 " 40 "	262	229	191	243	925	971	975
" 40 " 60 "	380	300	250	305	1,235	1,333	1,309
" 60 " 80 "	375	303	227	304	1,209	1,474	1,285
At 80 years and upwards	49	54	31	54	188	212	219

It is thus seen that the number of Deaths is this year lower than last year at each of the aetal periods, except that under one year of age, at which the number of deaths shows an increase. The decrease is pretty equally distributed among the other aetal periods. The larger mortality among Infants is accounted for by the epidemic of Infantile Diarrhoea, which prevailed with great severity during August and September, in contrast to the slight fatality of Autumnal Diarrhoea of the previous year. The diminution in the number of deaths at the other aetal periods is mainly due at the two periods of life between 1 and 10 years of age to the unusually small mortality from Zymotic diseases, such as Scarlet Fever, Measles, and Whooping Cough, which are always most prevalent among children, while the reduced mortality at the later stages of life is chiefly owing to fewer deaths from the majority of Local Diseases, but more especially those of the respiratory organs.

The average age at death for the four quarters of this and the previous year is as follows :—

	1880.	1879.
First Quarter	27 years 2 months.	27 years 8 months.
Second " "	25 " 2 "	25 " 7 "
Third " "	18 " 8 "	24 " 11 "
Fourth " "	27 " 0 "	22 " 10 "
Whole Year	24 " 3 "	25 " 2 "

The Death-age shows this year a reduction on that for 1879, which was, however, three years higher than that for 1878.

The average death-age was exceptionally low in the third quarter, owing to the heavy mortality from Infantile Diarrhœa. The average age at death for the fourth quarter compares very favourably with that of the fourth quarter of 1879. The higher age at death during that period is largely due to the very small mortality from Zymotic diseases, which usually occur at the early periods of life. In the Appendix is a chart showing the death-age in each week of the year.

INFANT MORTALITY.

The number of deaths of Infants under one year of age was 2,601, equal to a rate of 17·8 per cent. of the births registered, and exceeds that of any year since 1875, when Diarrhœa was very prevalent.

The rate of Infant mortality under one year for England and Wales was only 15·3 per cent.

The death-rate of Infants is always high in Birmingham, and indicates either gross neglect or lamentable ignorance, probably both; but the main cause of the increased fatality in 1880 was the great prevalence of Diarrhœa in the Summer quarter.

In my last Report I was able to state that this death-rate had fallen 3 per cent. in seven years: it had in 1880, however, gone up nearly as high as it was in 1873.

The percentage of deaths under one year of age to registered births in the principal large English towns, during the last eight years, has been as follows:—

	Average of 20 large											
	English	Towns.	London.	L'pool.	Birm.	M'chstr.	Leeds.	Sheffield.	Salford.	N'castle.	Nrwich.	
1880	...	17·0	...	15·8	19·1	17·8	18·0	17·4	16·5	20·0	17·1	21·6
1879	...	15·1	...	14·8	16·3	15·0	16·5	16·1	15·3	17·0	14·5	15·9
1878	...	17·2	..	16·4	19·3	17·0	17·5	18·8	17·6	18·5	16·1	21·1
1877	...	15·4	...	14·6	18·8	16·4	16·1	16·5	16·1	16·1	15·1	15·4
1876	...	16·7	...	15·7	20·8	16·0	18·0	18·1	16·9	18·9	16·7	17·8
1875	...	17·6	...	16·2	21·0	19·6	18·4	19·7	17·6	17·8	18·7	21·0
1874	...	17·5	...	15·6	23·3	17·8	19·7	19·9	18·8	18·9	19·8	17·8
1873	...	17·4	...	16·0	21·3	18·1	20·0	19·4	18·0	18·5	18·7	16·1

The deaths of Infants under one year compared with the total deaths registered were equal to 32·1 per cent. of the latter.

The subjoined statement gives the percentages of deaths of Infants under one year to the deaths at all ages in the principal large towns during 1880, and the seven preceeding years:—

Average of 20 large English Towns.												
	...	26·8	...	25·7	26·7	32·1	24·0	29·4	27·5	29·3	28·0	30·0
1880	...	26·8	...	25·7	26·7	32·1	24·0	29·4	27·5	29·3	28·0	30·0
1879	...	23·9	...	23·2	23·3	27·5	22·4	26·3	25·6	27·3	22·6	24·7
1878	...	26·5	...	25·2	25·5	28·6	24·0	31·0	26·5	30·5	25·8	28·7
1877	...	25·5	...	24·1	27·5	29·1	22·6	29·7	25·5	27·1	26·6	24·7
1876	...	26·9	...	25·7	29·6	30·5	24·5	29·9	28·6	29·2	30·4	27·0
1875	...	26·2	...	24·4	29·4	30·6	24·3	30·1	29·2	26·7	29·1	28·0
1874	...	26·4	...	24·9	28·2	27·8	25·4	28·8	29·2	28·2	27·5	24·0
1873	...	27·0	...	25·2	30·4	29·2	25·7	28·0	29·7	27·2	27·1	24·5

This greatly increased rate is due to the two-fold influence of the high mortality from Infantile Diarrhœa in the Summer quarter and the lower death-rate at all other periods of life as shown on the Table at page 8.

The number of children under 5 years of age who died in 1880 is 4,043, which is equal to 49·9 per cent. on the total number of deaths registered, and

though this is high, it shows more favourably than the death-rate under one year, as seen by reference to Table II.

If as is generally considered the death-rate of children under five years of age is a good indication of sanitary condition, the above figures appear very unsatisfactory, but unless we can compare the death-rate of 1880 with that of other years in children living up to five years of age, the results are not of very much value, as they will be comparatively higher or lower accordingly as the death-rate at all ages above five years varies from year to year. Not knowing the number of children living at the said ages, I am unable to give the desired calculation, but next year, after the Census shall have been taken, the necessary data will be obtainable.

The following Table presents in a convenient form the distribution of the deaths from various causes and at certain ages, and admits of comparison over a series of years.

ANALYSIS OF THE MORTALITY IN THE BOROUGH OF BIRMINGHAM, IN EACH OF THE EIGHT YEARS, 1873 to 1880.

Year.	Deaths of Infants under 1 year.	Proportion of Deaths under 1 year to 1,000 Births.	DEATHS.				Annual Rate per 1,000 living.			
			AT ALL AGES.		FROM ALL CAUSES.		AT ALL AGES.		FROM ALL CAUSES.	
			From all Causes.	From Seven Zymotic Diseases.	Of Children under 5 years.	Of Persons over 60 years.	From all Causes.	From Seven Zymotic Diseases.	Of Children under 5 years.	Of Persons over 60 years.
1873	2627	18.1	8990	2042	4424	1521	24.8	5.6	12.4	4.3
1874	2688	17.8	9665	2652	4589	1459	26.8	7.3	12.7	4.4
1875	2957	19.6	9668	2145	4785	1590	26.3	5.9	13.0	4.3
1876	2537	16.0	8330	1336	3881	1441	22.4	3.6	10.4	3.9
1877	2628	16.4	9038	1576	4460	1521	23.9	4.2	11.8	4.0
1878	2766	17.0	9662	2421	5128	1506	25.2	6.3	13.4	4.0
1879	2385	15.0	8650	1254	4095	1686	21.8	3.2	10.5	4.3
Average 1873 to 1879	2655	17.1	9143	1918	4480	1532	24.5	5.2	12.0	4.2
1880	2601	17.8	8088	1324	4043	1397	20.5	3.4	10.2	3.5

The third column of this Table shows that the death-rate of infants under one year of age has considerably increased, and is higher than in any year since 1875. The cause of this is the severe visitation in the summer quarter of Diarrhœa, which fell with special severity on infants under one year. The eighth column, however, shows that the general health is considerably improved; the ninth column, also, in spite of a slight fractional increase on the death-rate of Zymotics of the previous year, owing to the Infantile Diarrhœa epidemic already mentioned, gives satisfactory evidence of marked improvement in the mortality from the seven principal Zymotics of childhood. With the exception named, the mortality from these causes is less than in any year since 1872, and is considerably below the seven years' average; while the death-rate from all the diseases of childhood is, without exception, lower than it has been during the last eight years.

For fuller details of the Mortality see Tables in the Appendix.

SPECIFIED CAUSES OF DEATH.

The Registrar General divides the causes of death into five primary Classes, which form the principal headings of the mortality tables. As it is a point of much interest to know how the deaths during the year are distributed among these classes, I give them below, together with the number of deaths belonging to each, and the per-centage of these to the total deaths.

Class I.—Zymotic Diseases	...	...	1,613 ; or 20·0 per cent. of total mortality.									
Class II.—Constitutional Diseases	...	...	1,159 ; " 14·3	"	"	"	"	"	"	"	"	"
Class III.—Local Diseases	...	...	3,748 ; " 46·3	"	"	"	"	"	"	"	"	"
Class IV.—Developmental Diseases	...	...	1,203 ; " 14·9	"	"	"	"	"	"	"	"	"
Class V.—Violence	...	...	365 ; " 4·5	"	"	"	"	"	"	"	"	"

I. ZYMOTIC DISEASES.

This class has caused 1,613 deaths equal to a death-rate of 4·1 per 1,000 of the population. The deaths from

THE SEVEN PRINCIPAL ZYMOTICS,

viz., Small Pox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever, and Diarrhœa, amount to 1,324, and are equivalent to an annual death-rate of 3·4 per 1,000 persons living. In the seven years 1873, 4, 5, 6, 7, 8, and 9, the Zymotic death-rates were respectively 5·6, 7·3, 5·9, 3·6, 4·2, 6·3, and 3·2.

Compared with past years, the Zymotic death-rate must be considered very satisfactory ; it is a little higher (0·2) than last year, but this is a small increase, and is the result of untoward climatic conditions, viz., the high temperature in the Summer quarter, which induced an unusual amount of Infantile Diarrhœa. Every other member of the Zymotic group has shown a diminution of mortality, with the trifling exception in the case of Small Pox, from which two deaths occurred against none in the previous year, as will be seen by reference to Table V.

The subjoined figures give the rates in the principal large towns during this and the previous seven years :—

	Average of 20 large English Towns. London. Liv'rpool. Birm. Manchestr. Leeds. Sheffd. Salford. Newcastl. Norweh.											
1880	...	4·0	...	3·7	5·1	3·4	4·2	3·3	4·4	6·8	3·2	5·8
1879	...	3·2	...	3·3	6·0	3·2	3·4	3·3	3·5	4·0	3·9	2·2
1878	...	4·4	...	4·1	6·1	6·3	4·0	4·5	5·6	5·1	4·6	3·6
1877	...	3·5	...	3·5	4·7	4·2	4·2	2·8	3·3	4·8	2·5	2·9
1876	...	4·1	...	3·6	6·1	3·6	5·2	4·5	4·8	8·5	2·5	2·9
1875	...	4·4	...	3·9	4·5	5·9	4·6	4·6	4·8	7·2	3·6	4·3
1874	...	4·5	...	3·3	8·4	7·3	5·5	6·3	6·0	6·5	5·5	2·0
1873	...	3·9	...	3·3	4·0	5·6	5·9	5·6	4·9	6·0	6·8	2·2

The percentage of Zymotic deaths to total deaths has been as follows in the principal large English towns during the year under notice and the seven years preceding :—

	Average of 20 large English Towns. London. Liv'rpool. Birm. Manchestr. Leeds. Sheffd. Salford. Newcastl. Norweh.											
1880	..	17·7	...	16·8	18·6	16·4	16·4	15·7	21·0	26·2	14·4	23·7
1879	...	13·8	...	14·3	22·1	14·5	12·8	14·6	16·5	16·1	16·5	10·0
1878	...	18·2	...	17·6	21·9	25·1	14·3	19·0	23·6	19·9	12·2	14·5
1877	...	15·4	...	16·0	17·8	17·4	15·4	12·6	15·1	19·1	10·3	13·8
1876	...	17·3	...	16·1	22·1	16·0	17·8	17·8	19·6	26·6	11·0	13·2
1875	...	17·5	...	16·5	16·4	22·2	15·5	17·4	19·4	22·9	13·8	17·6
1874	...	18·0	...	14·9	25·2	27·4	19·7	22·0	22·3	22·0	18·6	9·0
1873	...	16·3	...	14·9	19·1	23·8	19·7	22·9	19·0	20·3	22·0	10·1

The remark I have made under the heading of Infantile Mortality as to the value of the comparison of deaths from diseases mostly affecting children under five years of age with the total death-rate applies also to the above Table, and shows the importance of knowing the number of persons living at all the specified atal periods : for instance, the lower general death-rate of 1880 makes the figures 16·4 relatively too high, for assuming the death-rate of 1879 and 1880 to be identical, they would be changed to 15·3.

DIARRHŒA

has this year been by far the most fatal Zymotic, having occasioned 777 deaths against only 234 in 1879, 680 in 1878, and 578 the annual average for the five years 1875-9. In the Summer quarter of the year, the death-rate from Diarrhœa was 6·1 per 1,000 of the population, as compared with only 2·9 in 1879.

The Registration Sub-Districts of Deritend, St. Martin, and St. George have experienced the highest death-rate from this cause.

The mortality from this disease last year was, as is always the case, nearly altogether confined to children, 539 of the deaths, or 70·7 per cent. occurring in infants under one year of age, and 730, or no less than 94·0 per cent. under five years of age, leaving only 47 deaths, or 6·0 per cent. at all other periods of life. This proportion of 94 per cent. in children under five is exactly that which obtained in London in the Summer quarter, indicating some general influence, and not special local causes.

The unusually high Mortality from Diarrhœa during the Summer quarter of 1880 was general throughout the country, and was higher than in any corresponding season during the last ten years, viz. : 3·32 per 1,000 ; the next highest being 3·11 in the year 1870. The average rate of the twenty large towns was 4·4, and ranged from 2·4 in Bristol to 10·6 in Leicester. In fifty other considerable towns the average rate was 4·6, and reached in Preston the high figure of 13·6.

It has been stated that in most places where the Diarrhœa Death-rate is high, that from other causes is high also. There are, however, many exceptions to this rule, if it be one, and Birmingham is a notable case in point, for while the general rate is decidedly low, compared with that of large towns, the Diarrhœa Death-rate is always relatively high. In 1880 our general Death-rate was the lowest on record for Birmingham, while the Diarrhœa Death-rate was nearly the highest.

The temperature for the Summer quarter was slightly above the average of the previous ten years, and while July and August were slightly cooler than the average of the previous ten years, the temperature of September was as much as 2°·7 above the average temperature of that month during the preceding ten years, and the temperature of the whole quarter was no less than 4°·2 above that for the Summer quarter of 1879. A difference so great as this is quite sufficient to account for a high Diarrhœa mortality ; indeed, whenever the temperature exceeds 59°, Infantile Diarrhœa invariably becomes prevalent. This temperature was maintained every week uninterruptedly from the second week in July until the third week in September, or over a period of nine weeks out of the quarter.

No doubt high temperature is the general and principal cause of the appearance of the disease, but as neighbouring towns, having similar temperatures, are affected differently, there must be some other contributory causes or conditions in operation.

High temperature, in addition to acting directly on the system, has the effect of setting up putrefaction in food and other organic matters, thus leading

to the ingestion and inhalation of hurtful solids, liquids, and gases. Hence with cleanly and pure surroundings ill effects may be avoided, which, under opposite circumstances would be experienced in great severity. Whether heat be the sole or principal cause of Summer Diarrhœa, which is especially a disease of infancy and childhood or not, it is certainly inseparably connected with the cause, as the disease is almost limited to the hot period in every year. The disease is further observed to be more common in towns than in the country, and in large than in small towns. Communities which are characterised by a high Birth-rate naturally exhibit a high Infantile Diarrhœa Death-rate owing to the abundance of subjects of attack.

After Diarrhœa, the next most destructive of the Zymotics has been

WHOOPING COUGH,

which has resulted in 217 deaths, against 384 in 1879 and 338 the average of the five years 1874-8. This disease has been proportionately most fatal in Deritend Registration Sub-District.

The number of deaths is also considerably below the annual average for the last eight years, which is 308, and only in 1873 and 1876 was the annual Death-rate from this disease lower than in 1880, nevertheless I cannot help feeling that in connection with this disease there occurs every year a very large and unnecessary, because avoidable, sacrifice of life. The disease is not in itself a very fatal one, and here, paradoxical as it may appear, resides its danger. It is because it appeals less to the fears and the imagination that it is neglected and allowed to become dangerous. The fatal cases occur mostly among the poorer classes who have neither the knowledge nor the means, perhaps, of giving that careful nursing which in most cases is alone necessary to cure the patient. Least of all is the importance of isolation realised, yet so extremely infectious is the disorder that without this precaution it is sure to spread and continue to be a large contributor to the Zymotic death-roll.

The mortality from

SCARLET FEVER

shows a marked decline, the deaths from this cause numbering in 1880 only 123, as compared with 309 in the previous year, no fewer than 995 in 1878 (the year of the highest intensity of the last epidemic), and 408 the annual average of the five preceding years.

The Registration Sub-Districts of St. Thomas and Edgbaston fared best, and the incidence of the disease was pretty equal upon the remaining districts.

FEVER,

which includes the three varieties, *Typhus*, *Typhoid*, and *Simple Continued*, comes next in order of fatality with 84 deaths, a still further decrease on the number in the previous year. It is most gratifying to find that the remarkable diminution in the Fever death-rate which was noticed last year has not only been maintained but still continues, and the same diminution is observed throughout the country generally, with a slight exception last year. It is a satisfactory proof of the improvement of the public health and of the practical value of sanitary work, such as better drainage, ventilation, and privy accommodation, and improved water supply.

The Fever death-rates in Birmingham and in twenty large English towns since the year 1870 are appended :—

Birmingham.						20 large Towns.	
1870	...	...	·63 per 1,000 per annum			...	·90
1871	...	...	·53	...	...	...	·78
1872	...	...	·54	...	...	...	·60
1873	...	...	·57	...	...	...	·59
1874	...	...	·56	...	...	...	·58
1875	...	...	·56	...	...	...	·52
1876	...	...	·40	...	...	...	·45
1877	...	...	·38	...	...	...	·42
1878	...	...	·38	...	...	...	·42
1879	...	...	·22	...	...	...	·29
1880	...	...	·21	..	...	...	·30

Out of 84 cases, 67 were classed as Typhoid and 16 as Simple Continued. One case was certified as Typhus, but after a careful enquiry into the circumstances of it, I came to the conclusion that the disease was incorrectly described; in fact the conditions of social existence in Birmingham are not favourable to the existence of Typhus, and speaking from my own observations, extending over thirty years, I may state that the disease does not occur here. A case might, of course, be imported, but even then the disease would not extend, and the case would be a solitary one.

MEASLES

has proved fatal in only 63 instances, against 169 last year.

DIPHTHERIA

has been debited with 51 deaths, as compared with 71 in 1879, and 83 in 1878.

This disease exhibits an amenability to sanitary improvements which encourage, not only the hope but the belief, that its extinction is fully within the powers of preventive medicine. Like Typhoid Fever it has undergone a remarkable and progressive, if not quite so rapid, diminution, having fallen in eight years in Birmingham from ·31 to ·13 per 1,000.

Since 1873 the Death-rates from this disease have been annually as follows :—

1873	1874	1875	1876	1877	1878	1879	1880
·31	·21	·16	·16	·14	·22	·18	·13

The years 1878 and 1879 appear to present an interference with the regularity of the decline, but my explanation of this interruption is that Scarlet Fever was severely epidemic at that period, and owing to the sore throat of the disease being frequently taken for that of Diphtheria it was set down as such. The error is one easily fallen into in cases where the characteristic eruption of Scarlet Fever has been absent or so slight as to escape notice, where subsequent desquamation has not been perceptible, and where the medical attendant has been called in late, and has not become possessed of the essential points in the previous history of the case. I have frequently investigated cases of alleged Diphtheria where no assignable cause for the disease existed, and where also there was excellent ground for the belief that they really were obscure cases of Scarlet Fever. Defects of drainage and impure water supply are doubtless the principal agencies by which the disease is engendered and disseminated, a very interesting series of cases illustrative of the connection between polluted drinking water and Diphtheria came to my knowledge during the year.

At a boys' school, attended by out-door pupils, a number of cases occurred in different parts of the neighbourhood, and finding no satisfactory causes at the homes of the boys, my suspicions that something was probably wrong at the

school were aroused. I made a visit to the school therefore, with a view to ascertain if it presented insanitary conditions such as might account for the attacks.

I found in the play-ground a midden privy, and not very far from it the pump, close to which ran the drain from the midden. This pump was the only source of water supply to the establishment, which receives about 40 boys.

On analysing the water of this pump, I found it to be concentrated oxidised sewage, presenting in fact 500 parts of ammonia in 100,000, or about one-fifth as much as town sewage, and a "Previous Sewage Contamination" of 117 per cent., or more oxidised nitrogenous organic matter than sewage itself. This pollution was unquestionably the result of leakage from either the privy or the drain. Pending the action of the Health Sub-Committee in regard to this well, I took measures, in which I have pleasure in stating I was most willingly assisted by the gentleman at the head of the establishment, to prevent its further use. No case of diphtheria has since occurred in the neighbourhood (to my knowledge), certainly no fatal case, since the well has been closed. It cannot be doubted that a continuance in its use would have produced more cases of illness among the pupils, which would also have extended to other members of the families, as was actually the case in one or two instances.

Two deaths have occurred from

SMALL-POX

during the year, against none in 1879.

The cases reported from this disease number 18, of which 16 were treated in the Borough Hospital.

DEATHS AND DEATH-RATE FROM SMALL-POX PER 100,000 OF THE POPULATION IN 20 LARGE ENGLISH TOWNS.

Town.	Population.	Deaths from Small-pox in the year 1880.	Rate per 100,000.			
			1880.	1879.	1878.	1877.
London ...	3,664,149	475	13·0	12·7	39·6	72·0
Brighton ...	107,321	0	0·0	0·0	0·0	0·0
Portsmouth ...	134,224	0	0·0	0·0	0·0	0·8
Norwich ...	85,827	0	0·0	0·0	2·4	0·0
Plymouth ...	74,993	0	0·0	0·0	0·0	0·0
Bristol ...	213,536	2	0·9	0·0	0·0	0·0
Wolverhampton ...	75,970	0	0·0	0·0	0·0	0·0
Birmingham ...	394,738	2	0·5	0·0	1·3	2·1
Leicester ...	129,912	0	0·0	0·0	0·0	0·9
Nottingham...	173,657	0	0·0	0·6	0·0	0·0
Liverpool ...	544,056	2	0·4	0·0	0·6	56·7
Manchester ...	363,130	2	0·5	0·0	0·3	13·3
Salford ...	185,786	0	0·0	0·0	0·6	57·1
Oldham ...	115,413	0	0·0	0·0	0·9	26·7
Bradford ...	197,196	1	0·5	0·0	0·6	2·2
Leeds...	318,929	0	0·0	0·0	0·0	1·0
Sheffield ...	304,938	1	0·3	0·0	0·3	0·7
Hull ...	149,627	0	0·0	0·0	0·5	0·7
Sunderland ...	116,730	0	0·0	0·0	0·9	0·0
Newcastle-on-Tyne...	149,366	0	0·0	0·0	0·7	0·7
In 20 Towns...	7,499,468	485	6·5	6·1	20·2	42·8

The subjoined statement gives the number of cases and deaths from this disease in the Borough since November, 1871 :—

DATE.					Cases.	Deaths.
1871.						
November 11th to end of year ..					359	43
Total ...					— 359	— 43
1872.						
1st Quarter					798	96
2nd "					632	92
3rd "					355	67
4th "					192	44
Total ...					— 1,977	— 299
1873.						
1st Quarter					171	29
2nd "					246	37
3rd "					124	18
4th "					253	38
Total ...					— 794	— 122
1874.						
1st Quarter					757	123
2nd "					1,303	196
3rd "					1,059	165
4th "					672	153
Total ...					— 3,791	— 637
1875.						
1st Quarter					366	85
2nd "					347	72
3rd "					95	14
4th "					16	2
Total ...					— 824	— 173
1876.						
1st Quarter					2	0
2nd "					2	0
3rd "					2	0
4th "					5	0
Total ...					— 11	— 0
1877.						
1st Quarter					7	1
2nd "					20	3
3rd "					20	3
4th "					3	1
Total ...					— 50	— 8
1878.						
1st Quarter					3	0
2nd "					4	0
3rd "					10	2
4th "					10	3
Total ...					— 27	— 5
1879.						
1st Quarter					1	0
2nd "					0	0
3rd "					3	0
4th "					0	0
Total ...					— 4	— 0
1880.						
1st Quarter					2	0
2nd "					5	1
3rd "					8	1
4th "					3	0
Total ...					— 18	— 2
Grand Total					... 7,855	1,289

DISEASE MAP.

The three diseases Scarlet Fever, Measles, and Typhoid having occasioned a comparatively small mortality, as last year, only one map has been employed to indicate their distribution over the Borough.

A glance at the Map will be sufficient to at once show that, as in former years, each of these diseases is fairly equally distributed over the Borough, with the exceptions which have always prevailed, viz., that Edgbaston and the greater portion of St. Paul's and Market Hall Wards have an almost total immunity from diseases of this nature; the former chiefly on account of its much less dense population compared with other parts of the Borough, and its generally superior sanitary conditions, and the latter Wards owing to the fact that they are chiefly occupied by warehouses and the like, and that, consequently, the population is not dense, and consists principally of adults.

II. CONSTITUTIONAL DISEASES.

The deaths in this class number 1,159, equal to a rate of 2·9 per 1,000 of the population. The mortality from *Tabes Mesenterica* has increased somewhat, but from all the other principal diseases in this group it has diminished. The fatality of *Phthisis* (Consumption), usually the most destructive of any disease of this or any other class, except the Local Disease Bronchitis, happily shows a decline. The mortality from Cancer has also diminished on that for the year 1879.

III. LOCAL DISEASES.

To this class, 3,748 deaths were referred, the rate of mortality per 1,000 persons living being 9·5. The most noticeable feature is a considerable reduction in the number of deaths from Bronchitis; other diseases of the respiratory organs, except Pneumonia, have also decreased in fatality. The deaths from Pneumonia, however, show a rather large increase. Paralysis, Convulsions, and Brain diseases generally have been less fatal than in 1879, and the same remark is applicable to Diseases of the Heart.

The deaths from diseases of the Digestive and Urinary Organs and of the Organs of Generation and Locomotion show generally but little variation on the numbers for the previous year, while those of the Integumentary System have been a little more numerous.

IV. DEVELOPMENTAL DISEASES

have resulted in 1,203 deaths, equivalent to a death-rate of 3·0 per annum. In this class the mortality from Debility has alone increased. The reduction has been most marked in the deaths certified as due to Senile Decay and Child-birth, the number of deaths from the latter cause having fallen from 54 in 1879 to 36 in 1880, or including Puerperal Fever in each year from 65 to 52, equal to a death-rate of 3·4 per 1,000 births registered, against a rate of 4·1 last year.

V. VIOLENT DEATHS.

The deaths and death-rate from violence were respectively, 365 and 0·9.

The Borough Coroner having brought to the notice of the Council the occurrence of numerous accidents by fire among children, I issued for general distribution a handbill of which the following is a copy :—

BOROUGH OF BIRMINGHAM.

ACCIDENTS TO CHILDREN BY FIRE.

The Borough Coroner, supported by one of his Juries, having called the attention of the Health Committee, through the Mayor, to the fact that a number of children this cold weather fall victims to burns through their clothes catching fire, and having further suggested that the use of fire-guards be recommended and instructions published for dealing with children whose clothes are on fire, it is hereby recommended that all grates be furnished with guards, and that in the event of a child's clothes being on fire, the child be wrapped up in a blanket, coat, woollen shawl, or other *woollen* garment, and that the patient so wrapped up be immediately carried to the hospital.

This simple mode of putting out the burning clothes of a person is much safer and more efficient than that of throwing on water.

ALFRED HILL, M.D.,

Medical Officer of Health.

The Council House,
January, 1880.

METEOROLOGY.

The average temperature for the year 1880 was $48^{\circ}\cdot 0$ Fahr.; this is $1^{\circ}\cdot 4$ higher than that of 1879, which was an exceptionally dull and cold year, but with that one exception the temperature was lower than in any year as far back as 1867, and lower than the average temperature of the previous decennium by $0^{\circ}\cdot 8$.

The mean temperature for the first quarter was $38^{\circ}\cdot 9$ Fahr., 2° higher than that for the winter quarter of 1879, which was exceptionally cold, but 2° lower than the mean temperature for the first three months of the ten years 1870-79.

The mean temperature of the second quarter was $51^{\circ}\cdot 3$. It was $1^{\circ}\cdot 8$ above the temperature for the second quarter of 1879, but $0^{\circ}\cdot 7$ below the average temperature for the Spring quarters of the previous decade; while the mean temperature of the third quarter was $59^{\circ}\cdot 8$, and was $1^{\circ}\cdot 5$ higher than that of the Summer quarter of the preceding year, and $0^{\circ}\cdot 3$ above the mean temperature for that quarter in the ten years 1870-79.

The mean temperature of the fourth quarter, $41^{\circ}\cdot 9$, was below the temperature of the fourth quarter of 1879, and the average temperature of the last three months of the ten previous years, by $0^{\circ}\cdot 1$ and $1^{\circ}\cdot 3$ respectively, and this notwithstanding that the temperature of December exceeded the average of that month in the previous decade by $3^{\circ}\cdot 8$. October and November were, however, unusually cold months.

The rainfall amounted to 33·25 inches; it was below the average in January, March, May, and August, but considerably exceeded it in most of the other months. Very heavy falls were recorded in each of the last four months of the year.

The particulars of the Meteorological observations of the year, which were made by myself and my son, Dr. A. Bostock Hill, are given in the following Table, and in Table XII., and the comparative results for the preceding ten years in Table XIII.

Some interesting particulars, associating Meteorology with Births and Deaths, at certain ages, and Mortality from certain diseases, are given in the subjoined Table, for the plan of which I am indebted to Dr. Tatham, Medical Officer of Health of Salford.

Mr. Cresswell, of the Birmingham and Midland Institute, has obligingly furnished me with the records of the horizontal movement of the air in miles.

METEOROLOGY, BIRTHS, DEATHS, AND MORTALITY FROM CERTAIN PREVALENT
DISEASES FOR EACH WEEK OF 1880.

Week.		Temperature of the Air.			Air Pressure	Horizontal Movement of Air in Miles.	Mean Humidity, complete Saturation=100.	Rainfall in inches.	Births.	Deaths at the Ages.			Deaths from									
Number.	Date of Ending.	Highest during week.	Lowest during week.	Mean Temperature.	Extreme Range of Barometric Changes.					All Ages.	Under 1 year.	1 to 5 years.	Over 60.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.
1880.																						
1	Jan. 10	44°0	28°5	37°3	168	1495	94°1	0°00	338	175	46	32	37	...	9	3	3	1	3	4	20	39
2	" 17	43°0	27°0	37°5	609	888	94°6	0°53	307	187	54	34	39	...	6	2	1	7	...	5	26	39
3	" 24	38°0	19°0	26°7	663	743	98°4	0°00	303	190	44	47	37	...	8	4	1	3	2	4	25	50
4	" 31	47°0	18°0	29°4	228	751	98°2	0°00	304	198	41	44	33	...	1	8	3	10	...	2	14	59
5	Feb. 7	52°0	31°0	41°3	744	1275	95°8	0°19	313	160	41	18	40	...	2	...	1	4	...	3	17	44
6	" 14	48°0	33°5	40°6	878	1544	90°1	0°86	329	176	44	24	40	...	2	1	1	8	1	2	19	50
7	" 21	52°0	35°0	44°2	744	1849	91°4	1°89	292	159	48	33	29	...	4	2	...	9	1	5	17	38
8	" 28	49°0	34°5	40°1	935	1516	89°7	0°28	276	155	35	18	37	...	1	2	...	1	2	25	42	
9	Mar. 6	56°5	35°0	46°6	936	2503	79°4	0°51	258	144	39	24	32	...	1	3	...	7	1	3	12	40
10	" 13	55°0	32°8	41°8	439	...	93°7	0°02	328	164	62	19	24	...	2	...	1	4	...	7	18	39
11	" 20	53°0	27°0	38°5	290	827	97°0	0°01	316	139	49	28	21	...	1	3	...	7	1	3	8	33
12	" 27	60°0	27°0	39°7	296	955	85°7	0°00	302	172	52	36	28	...	2	3	1	5	2	4	17	48
13	April 3	61°0	33°0	45°0	774	1020	89°5	1°08	298	178	53	34	27	...	1	...	...	9	2	2	23	50
14	" 10	58°0	36°0	45°3	1050	1668	81°5	0°46	344	165	47	35	40	...	1	1	1	2	3	3	12	57
15	" 17	53°5	35°0	43°6	367	1010	84°3	0°65	316	176	46	32	40	...	1	3	...	3	4	1	15	53
16	" 24	61°5	39°0	50°3	277	1883	78°7	0°15	323	157	44	37	17	...	5	...	6	1	4	12	41	
17	May 1	57°5	31°0	44°8	492	1490	81°3	0°01	329	149	40	26	22	...	...	1	1	3	1	6	11	31
18	" 8	62°0	38°0	48°7	403	1014	72°4	0°00	334	143	42	24	33	...	...	5	1	3	1	4	16	41
19	" 15	62°0	34°5	47°6	389	931	81°0	0°43	321	168	53	30	31	...	...	2	5	2	2	19	51	
20	" 22	66°0	36°5	52°8	508	1425	70°6	0°01	275	152	33	29	31	1	...	2	1	4	1	2	16	40
21	" 29	68°5	41°0	53°4	726	1522	83°4	0°98	293	137	45	14	22	...	1	1	...	4	1	1	10	35
22	June 5	63°5	42°5	50°5	350	1377	77°0	0°99	290	125	37	18	29	...	1	1	...	1	2	4	18	19
23	" 12	64°0	40°5	52°1	490	1569	83°4	0°50	349	107	41	10	19	...	1	3	...	4	3	2	10	15
24	" 19	71°0	48°0	57°8	450	1044	84°3	0°34	285	136	36	26	28	...	1	3	1	10	...	3	12	27
25	" 26	69°5	50°0	59°3	300	1006	83°1	0°93	329	139	36	31	30	...	1	1	1	9	1	6	11	30
26	July 3	72°5	49°0	60°6	530	1142	79°3	0°30	316	138	43	29	15	...	1	5	2	2	5	9	11	33
27	" 10	67°5	48°0	57°8	602	1408	81°1	0°98	238	100	34	15	22	1	...	4	...	4	2	11	6	21
28	" 17	72°0	50°0	60°7	218	1021	87°3	1°24	311	120	45	30	9	...	3	1	3	5	3	13	9	35
29	" 24	72°5	49°5	62°0	182	874	84°5	0°43	258	138	53	27	15	...	...	4	1	6	1	17	8	31
30	" 31	74°0	47°5	59°9	435	1233	87°3	1°85	314	156	62	29	22	...	...	2	1	1	2	32	18	24
31	Aug. 7	73°0	51°0	60°6	338	1031	81°1	0°42	271	184	75	39	21	...	1	7	...	2	...	50	18	21
32	" 14	80°0	44°5	62°8	765	1167	82°1	0°31	346	195	95	31	22	...	...	6	...	2	2	66	16	11
33	" 21	77°0	53°0	59°1	081	1124	91°0	0°02	263	183	95	32	16	...	1	4	3	3	...	75	10	17
34	" 28	75°5	47°0	60°1	329	939	88°4	0°01	251	201	101	35	24	...	...	2	...	3	2	87	10	16
35	Sept. 4	82°0	57°0	65°7	528	740	81°0	0°02	266	173	76	25	24	...	1	1	2	2	1	55	16	12
36	" 11	85°0	44°0	61°4	443	...	79°5	0°21	248	176	86	31	21	...	2	1	1	2	1	59	11	21
37	" 18	65°0	48°0	56°0	580	1255	87°6	4°08	263	206	89	37	25	...	...	1	1	3	4	64	13	23
38	" 25	67°0	45°0	55°6	499	1445	85°3	0°31	261	164	77	28	17	...	...	2	1	4	1	47	15	14
39	Oct. 2	67°0	48°0	56°3	581	508	93°7	0°03	282	131	44	30	20	...	1	1	1	2	3	23	8	22
40	" 9	53°5	35°0	45°7	694	966	92°7	2°69	266	128	53	18	19	...	...	1	1	1	1	23	12	17
41	" 16	54°0	32°0	46°4	345	1469	88°8	0°06	282	152	45	34	27	...	...	2	...	3	1	19	17	27
42	" 23	56°5	26°0	40°7	389	587	88°0	0°11	261	124	40	26	25	...	...	3	1	1	3	11	7	24
43	" 30	49°0	29°0	40°1	1465	1074	91°1	3°52	246	165	37	31	28	...	1	4	2	7	3	5	20	37
44	Nov. 6	50°0	23°0	38°2	370	996	89°0	0°00	303	154	40	31	29	...	...	2	2	2	3	6	14	46
45	" 13	56°0	28°0	44°8	669	950	90°4	0°20	305	160	59	19	22	...	...	1	2	5	...	6	9	41
46	" 20	61°0	26°0	38°9	1534	1662	93°4	1°37	253	122	30	17	28	...	1	1	1	1	2	4	10	36
47	" 27	55°0	19°0	38°5	1002	1078	94°0	0°53	235	141	32	30	23	...	1	2	...	1	3	3	12	38
48	Dec. 4	51°0	33°0	44°2	329	1696	92°0	0°25	267	143	39	15	35	...	2	3	3	2	...	1	22	31
49	" 11	53°0	37°0	47°4	318	902	92°4	0°13	283	138	29	30	31	...	...	2	1	8	1	4	9	34
50	" 18	52°0	27°0	40°2	547	1736	92°0	0°54	259	152	38	19	43	...	...	1	1	6	1	1	2	36
51	" 25	51°0	29°5	38°3	734	1089	92°7	1°02	249	125	37	23	26	...	1	1	1	2	1	2	12	34
1881.																						
52	Jan. 1	49°0	29°5	37°7	963	1314	95°7	1°66	262	158	39	28	32	...	...	2	...	8	2	...	15	48

II.—SANITATION.

i. *Influences affecting or threatening to affect injuriously the Public Health.*—Among these may be mentioned the old, dilapidated, crowded, and ill-ventilated houses and courts still existing in some parts of the town, and many of which are being removed by the improvements now being made or will shortly be removed by those about to be made, notably in connection with the "Improvement Scheme" and the new street from the Horse Fair to Ethel Street, as well as by the formation of open spaces in the proposed extension of railways and railway stations. These constitute an excellent instalment of a work which with time will no doubt be continued until all the unhealthy areas distinguished for an excessive mortality shall have been converted into places where existence shall be possible under reasonable conditions of health and comfort.

The numerous midden privies still remaining constitute a danger to health by the evolution and diffusion of noxious gases and vapours, which find their way into the confined houses around, and by the soakage of filthy liquids into the ground and the wells which are still largely used to supply drinking water. The impurity of soil and surface so commonly observed, particularly in unpaved courts, is, I feel sure, a constant source of low health and a condition favourable to the outbreak and extension of certain forms of Zymotic disease. The muddy and impure state of courts is not alone dangerous; the streets are too often strewn with the animal and vegetable refuse thrown out of houses, which ought to be either burned or consigned to the proper receptacles for such refuse provided on all premises. The decomposition of what may be considered harmless substances has undoubtedly an injurious effect on health, and it is readily promoted by exposure on the surface of the ground. It is to be feared, however, that a considerable time and spread of education will be necessary to effect a change in the habits of certain classes of people with regard to these matters, though much can be done by the advice and expostulation of the Sanitary Officers and the warnings of the Police, to expedite it.

The construction of buildings on a foundation of house-refuse and road-scrappings before sufficient time has been allowed for the complete destruction of the organic materials present, is, I believe, a very dangerous custom, as the gaseous products of putrefaction rise up into the dwellings, favoured by their higher temperature, and must exert a similar action to the one described in the case of organic impurity on the surface of courts and streets. At the present time a very large block of houses (bounded on one side by King Edward's Road) is being built on such a site. I have called the attention of your Committee to the fact, and have also had a conference with the Public Works Committee in reference to it, as a result of which it has been decided to act on a suggestion I made to underlay the floors with a sufficient layer of concrete impervious to moisture and air.

There still exist a number of houses which are in direct communication with the drains and sewers, and these houses are mostly those of the better class furnished with the conveniences of sinks, lavatories, bath-rooms, cisterns, and water-closets, which serve as channels for the introduction of contaminated air. In these respects such houses expose the occupants to graver dangers than do those of a humbler grade, and as the tenants are assumed, though often groundlessly, to be protected by their better knowledge of sanitary requirements and their larger means, such houses escape that supervision and inspection which are employed in the case of small house property.

The cellars of good houses often constitute the point of entrance for sewer gases. There is a common notion that a cellar must be provided with a drain, although there is no necessity whatever for it, and there are the most cogent reasons against it. The traps invariably become unsealed by evaporation of the

water, and then free admission is allowed for the dangerous gases, which rush in and ascend through the house by virtue of the higher temperature of the rooms. In one instance a case of Typhoid Fever was distinctly traceable to the backing of the liquid contents of the sewer into a cellar.

The keeping of fowls, pigeons, and rabbits in cellars and attics, and even in courts, is another of the influences calculated to prove injurious to health, it produces a devitalisation and a vitiation of the air which are highly prejudicial, especially to the health of children, the more particularly as the practice is only followed in small houses where the cubic space is never too large and ventilation scarcely receives the necessary attention. I am aware that on this point there is an additional difficulty to be overcome before reform can be brought about, and the difficulty is the greater because it is connected with sentiment; there is a feeling that the habit of keeping birds and certain animals is one to be encouraged as leading to an elevation of taste and morals, or at least of diverting from less desirable amusements and pursuits; it is also sometimes maintained that it is attended with a little profit which proves highly acceptable. The first position is altogether untenable if it can be proved that the practice is injurious to health, which I maintain it is, and as to the second it is the experience of myself, and of all I have spoken with on the subject, that animals kept under such circumstances never yield a profit, but on the contrary inflict a loss.

It is not necessary that the organic vapours of putrefaction and decomposition be charged with any special poison, they are in their own nature depressing and debilitating, and the only safety is to be found in the breathing of a pure atmosphere such as is impossible under the conditions of soil, surface, and air which I have spoken of under this head.

It too often happens that poor people, either from carelessness, ignorance, or because of their poverty, fail to obtain that medical assistance which is necessary to mitigate suffering and prevent death. Hence a number of deaths are not certified at all by the medical practitioners, and they remain either altogether uncertified, or come to be certified by the Coroner after an inquest into the cause of death. The following table gives the particulars as far as I am able to obtain them, but in this, as in many other instances, the difficulty of obtaining statistical information affecting the Borough is almost insuperable owing to its being constituted of two complete parishes and a portion of a third. It has long been a desideratum to make the Registration District and the Borough co-terminous, and it is to be sincerely hoped that its fulfilment is not far off.

CERTIFICATION OF THE CAUSES OF DEATH IN 1880.

Registration Sub-Districts.	Total Deaths.	Certified by.		Not Certified.	Proportion per Cent. of Deaths.		
		Registered Medical Practitioners.	Coroner.		Certified by.		Not Certified.
					Registered Medical Practitioners.	Coroner.	
Borough of Birmingham.							
Ladywood ...	892	805	79	8	90.2	8.9	0.9
St. Thomas...	809	703	89	17	86.9	11.0	2.1
St. Martin ...	870	784	69	17	90.1	8.0	1.9
St. George ...	1453	1257	177	19	86.5	12.2	1.3
All Saints ...	1359	1263	80	16	92.9	5.9	1.2
Deritend ...	1443	1333	94	16	92.6	6.4	1.0
Duddeston ...	1024	928	68	28	90.5	6.8	2.7
Edgbaston ...	247	231	10	6	93.5	4.0	2.5

Since "the child is father to the man"—when he is permitted to become one—the question of Infant Treatment has a most important bearing on public health. The mortality of infants is so excessive that it is both a reproach and a danger. It is high time that some more active measures were taken to grapple with this particular opprobrium of our social system, for though it is not to be denied that the question has a sanitary side, yet it is more of a social than of a sanitary problem which presents itself for solution.

The untimely deaths of young children, the saddest of all kinds of waste of human life, are not to be prevented by a Sanitary Authority. They are the outcome of ignorance, intemperance, the system of mothers absenting themselves from home all day in order to go to work, and other allied causes, but the most general of all is ignorance. There are thousands of mothers who are totally ignorant of the proper method of managing Infants. During health they don't know how to either properly feed or clothe them, and during sickness are equally ignorant of the mode of nursing and ministering to them.

In cases where the mother as well as the father is obliged to go out to work, the little one is left in charge of another or others little older than itself, exposed to all the dangers of improper food, cold and injury; in short, is deprived of a mother's care, and exposed to so many unfavourable influences that the result can be no matter of surprise.

Two courses of action seem to be indicated for the diminution of the suffering and waste of Infant life. The one is an organisation of benevolent and philanthropic ladies in considerable numbers to visit the homes of the poorer classes and instruct them in the simple canons of Infant Management, in the importance of proper food, clothing, nursing, and general treatment. A few ladies are already engaged in the useful work of giving lectures on health subjects, but excellent as is their object and beneficial as is their influence, they must necessarily fail to reach to a sufficient extent the thousands of homes which stand in need of their instruction.

The other is the establishment of Crèches or Day Nurseries, where the children of parents who are obliged to go out to work may be taken care of for the day at a trifling cost. I am often pained and shocked to see during my visits three or four little children, the eldest perhaps not more than six or seven years old, left entirely to themselves and huddled round a fire, unprotected even by a fire-guard, and scantily dressed in the most inflammable materials, a cotton dress or pinafore, or perhaps a nightgown. It is not surprising that so many fall victims, under the circumstances, to disease and accident, particularly from fire. Nothing would prove such a benefit to children so situated as the care, protection, and amusement furnished by a well ordered Crèche, and yet I know of only one such institution in the town in active operation. A short time ago I visited this establishment which is situated in Bishopsgate Terrace, Bishopsgate Street. The matron received me very civilly, showed me the arrangements, and gave me every information. The larger children were engaged with a rocking horse and other toys, and were quiet and happy, some of the younger ones were asleep in their cots. I gathered from her that the average number of children daily received is about 20, that once 38 were admitted, and frequently 34 or 35. The charge for each child is twopence per diem, producing an annual income of about £50 per annum. The working expenses amount to about £190 per annum, the difference being made up by subscriptions and donations. The matron informed me that the mortality from Diarrhoea and other Zymotics is much less among children in the Crèche than among the same class of children at home. Other facts of interest are contained in the rules of the institution, of which the following is a copy:—

CHILDREN'S DAY NURSERY,

NOS. 2 AND 3, BISHOPSGATE TERRACE, BISHOPSGATE STREET.

1.—THE objects of the Nursery are to take care of the children of widows, widowers, and of married women in cases where the mothers are obliged to work from home; also to feed such children, and otherwise to do all that may be necessary for their health and comfort, during their stay in the Nursery.

2.—Applicants for the admission of children must bring their Marriage Certificate and a letter of recommendation from some well-known person, to the Secretary at his residence, and only those children will be admitted, whose mothers can clearly show that they are obliged to work from home.

3.—The Committee will not be responsible for any accident that may happen while the children are left under the care of the matron, having provided a person to fill that situation whom they believe to be competent to take all proper care of the children.

4.—That the nursery will be open every week-day at 7 a.m., and will be closed at 7-15 p.m., excepting on Saturdays, when it will be closed at 2 p.m.

5.—Children under 5 years of age will only be admitted, if clean and properly clothed: and a payment of twopence a day will be required for each child each morning *when brought*.

6.—If any person bring a child to the Nursery out of a house where an infectious illness is at the time, the person doing so will not be allowed to send a child again to the Nursery. The infectious illnesses include Fever, Measles, Whooping Cough, Scarlatina, Chicken Pox, Small Pox, and Mumps.

7.—The children must be brought and taken away either by a parent or some fit person.

8.—A change of residence should be notified to the Secretary.

9.—Unless the rules are strictly kept, the child will not be re-admitted.

By order of the Committee,

J. STIMPSON, *Hon. Sec.*,

55, ISLINGTON ROW.

The rules carefully provide that only proper cases shall be admitted, and while the regulations as to diet and management seem to me to be very judicious, I can testify from observation as to the cleanliness and good ventilation of the establishment. I should be glad to see such an institution in every ward in the Borough. They would not only prove a direct advantage, but would put a stop to the pernicious and fatal system of baby-farming, for inefficient nursing too often means mismanagement, neglect, and drugging with narcotics.

ii. *The Causes, Origin, and Distribution of Disease* have received constant attention and investigation. Occasional or special inspection into matters of more pressing importance and systematic inspection at other times have been regularly carried on, and wherever it appeared desirable that I should make a personal examination and investigation I have always done so, and embodied the results in my fortnightly reports to your Committee. By these means, the few cases of Small-Pox and the two deaths from that disease were mostly found to have been imported, and effectual measures were taken to prevent the spread of the disease. Cases of Typhoid and Diphtheria were in many cases clearly accounted for, either by importation, by direct infection, or through drainage defects and the use of water polluted by animal and excrementitious matter.

The extraordinary development in recent years of School attendance increases the danger of communicating the diseases of childhood, but I am pleased to take this opportunity of saying how well the new schools are adapted for their purpose, and how willingly the School Board and its officers render every information and assistance to the sanitary authority in the effort to prevent and limit the spread of the disease.

In some instances, trades have been found to be carried on in houses where infectious diseases existed, such as tailoring, laundry work, and milk selling. Steps have at once been taken to prevent the diffusion of the diseases in such cases.

iii. *Advice to the Sanitary Authority on matters affecting public health.* The improvements in St. Bartholomew's Churchyard, and in St. Martin's Churchyard, having rendered inevitable the exhumation and re-interment of the human remains lying there, I was requested to examine the condition of the ground and advise upon the best means of preventing injury to the public health. The remains removed from certain parts of St. Bartholomew's Burial Ground were placed in another part of the same, while thirteen bodies exhumed from St. Martin's Churchyard were enclosed in lead coffins and re-interred in the Church of England Cemetery.

The demolition of Cannon Street Chapel also required the removal of a large number of human remains, which were conveyed to Witton Cemetery. I am glad to state that the method of disinfection and procedure which I advised were effectual in preventing any nuisance in every case, and that in no instance was illness produced, even among the men engaged in the work, which was of considerable magnitude and duration.

My opinion as to the fitness for habitation or otherwise of certain properties in Price Street and Lench Street having been sought, I visited and inspected them, and gave a certificate to the Improvement Committee to the effect that the buildings were unfit for human habitation.

Having received a request to inspect and furnish a Report upon the Sanitary condition of the Workhouse, and a Resolution from your Committee to do the same in regard to the Borough Lunatic Asylum, I duly complied with both requirements.

The following are copies of my Reports upon these Institutions :

MEDICAL OFFICER OF HEALTH'S DEPARTMENT,
January 13th, 1880.

TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

I beg to report that having received a request to visit and report upon the sanitary state of the Workhouse, I have, under the guidance of Lieutenant Carter, the Master, who kindly rendered me every assistance, made the required inspection, as far as the principal portions of the building are concerned, viz. :—The Master's present House, the Master's new House, not yet occupied, the new Tramp Ward, Males' Surgical Ward, Females' Surgical Ward, Males' Epileptic Ward, Females' Epileptic Ward, new Epileptic Ward, Aged Men's Ward, the Girls' School, the Boys' School, and the Cellar.

In the Master's present House, the pantry and the combined watercloset and urinal are in direct communication with the drains, acting doubtless as inlets to sewer gas, and therefore highly dangerous. They call for immediate attention.

The new House is also not free from defects in its Drainage arrangements. The pantry, sink, and bath waste pipe are apparently in direct communication with the drains, and the rain water spouts, which are also in connection with the drains, terminate upwards on a level, or nearly so, with and close to the bed-room windows in some instances. These points ought to receive attention before the occupation of the house.

One of the Cellars is neither lighted nor ventilated, and is consequently very damp.

The Lavatory basins in the new Tramp Ward are in direct connection with the drains, and destitute of any arrangement sufficient to exclude sewer gas.

The Males' Surgical Ward is provided with pan closets, which, although separated from the Ward by a lobby admitting of cross ventilation, are, nevertheless, in my opinion, unsuited to the interior of a building, and particularly of one devoted to the treatment of the sick.

In the Females' Surgical Ward the lavatory basins on the ground floor are in direct communication with the drain, as is also the sink upstairs. The watercloset is badly placed, and does not appear to be constructed with due regard to the requirements of health.

The Males' Epileptic Ward Lavatory has a bell trap in the floor of the room, the bell of which I found on examination to be broken and useless, allowing of the free entrance of drain air into the building.

The Females' Epileptic Ward Lavatory was also in direct communication with the drain.

The new Epileptic Ward is completed but not yet occupied, awaiting, I believe, the approval of the London Board. Here, again, the Baths and Lavatory basins are in direct communication with the drain, the Baths, however, being provided with syphon bends, but the basins having no provision of any kind against the admission of foul gases. There is a D trap on the floor of the room, which, of course, ought on no account to be there.

Outside the Building is a row of earth closets, which are so badly arranged that already though only used by the workmen they constitute a nuisance; but what surprised me most is provision upstairs for the use of earth closets quite in the interior of the building. They cannot fail to be a source of nuisance and danger to health both in the use and during their removal for emptying, and I should hope their abolition will be effected whether the Central Authority may require it or not.

Connected with the Aged Men's Ward are three lavatories, in all of which are bell traps: these bell traps are mostly concealed by the lavatory basins which discharge over them, but on examining them in one of the lavatories I found that two out of the three traps were without the bells, one of which was altogether lost. In this one room were, therefore, two direct openings into the drain, and it is uncertain how long this had been the case.

Girls' School. Inside the corridor on the ground floor is a bell trap, the bell of which at the time of my visit was displaced, in addition to the top being broken.

The Boys' School is provided with so-called earth closets, which, however, consist of rows of seats on both the first and the second floor, at a height from the ground of about 30 and 50 feet respectively, through which space the dejections have to fall before finding a temporary resting place at the bottom of the immense cavern of about 10 or 12 feet square and about 50 feet high. The seats are so many points of entrance into the school-rooms for the foul emanations proceeding from the mass of filth below. In a sanitary aspect the arrangements are about the most barbarous I ever saw, not to be equalled even by those the remains of which are sometimes still to be found in old castles and similar mediæval structures, but, unlike them, not admitting of excuse on the ground of necessity.

In the Cellar there is a bell trap, the bell of which was out of place at the time of my visit, and in the area just outside the same cellar was a bell trap choked up with sand and minus its bell, which was broken off from the cover.

Through the Kitchen and Bed-rooms there runs up from the basement a disused shaft, neither the former nor present use of which could be satisfactorily made out, but it is damp and said to be offensive in smell at times in one of the bed-rooms. It seems to me probable, that the brickwork is saturated with moisture and organic vapour from a cooking boiler.

The internal Drainage Arrangements of the whole Institution are, as a general rule, faulty in principle and defective in condition. The closets are in many cases unsuitable, both within and without the buildings. There are traps and openings where none ought to be, and it would almost seem, judging from appearances alone, as if there had been a deliberate design to ventilate by sewer gas, to lay it on systematically, like illuminating gas and water. I need hardly say that such a condition is excessively dangerous to health, and indeed sore throats and other forms of disease traceable to sewer gas have been complained of by many of the officers. It is impossible to say what influence has been exerted upon the health, the character of epidemic and endemic diseases, and the mortality of the huge assemblage of inmates by the present and past condition of the drainage system, but there can be but little doubt it has been an injurious one, and I am sure it is only necessary to point out to the Board of Guardians the nature and danger of such defects, of which they cannot possibly hitherto have had any knowledge, in order to induce them to have the whole system of internal drainage overhauled and remodelled on a sound sanitary basis.

I remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D.,

Medical Officer of Health.

MEDICAL OFFICER OF HEALTH'S DEPARTMENT,

February 18th, 1880.

TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

I beg to report that in accordance with resolution, minute 7136, of your Committee, I visited the Borough Lunatic Asylum on the 6th instant, and made the required inspection, in which I was accompanied and fully assisted by Mr. Green, Medical Superintendent, Dr. Lyle, the Assistant Medical Superintendent, and Mr. Knight, the Clerk.

The general condition of the Institution is admirably neat, clean, comfortable, and even tasteful, the ventilation of the rooms is carefully attended to, and if certain structural and drainage defects were removed, the sanitary condition of the building would be excellent.

I inspected the various rooms and dormitories, and found in connection with each Ward a lavatory and a water closet combined; the former is provided with a slop drain, which in some cases is trapped at the inner end with either a D or bell trap, but which in others is open; in a few cases the slop drainage from an upper room discharges above the trap of the room below it,

The water closets are well kept and are all in good working order. They are nearly all automatic in action, but are not so situated as to admit of an intervening lobby with cross ventilation, which is the best arrangement, and which would probably be supplied in a similar building erected at the present time.

In only two cases are the soil pipes from the closets ventilated.

The following are the details of the drainage arrangements in connection with each ward.

No. 1.—Male Ward.—The drainage from the lavatory belonging to this ward is by means of an open pipe about four inches in diameter on the floor. There is no trap attached to it in the lavatory, but it is severed from the drains and sewers by a dip trap just below the level of the ground outside. In order to save repetition I may remark that all the discharge slop pipes between the interior and the exterior of the building are severed from the sewers in the same manner.

No. 2.—Male Ward.—There is no trap on the floor of this lavatory; the slop waste pipe is open.

No. 3.—Male Ward.—Bell trap on floor.

No. 4.—Ditto —Drain pipe on floor closed by a D trap.

No. 5.—Ditto —Same arrangement.

No. 6.—Ditto —Drain on floor.

No. 7.—Male Refractory.—There is cross ventilation of a certain kind between the water closets and the ward which might be considerably improved upon by the introduction of a door.

No. 8.—Male Ward.—Open pipe drain on floor of lavatory.

No. 9.—Male Idiots' Ward (Boys).—Same arrangement.

No. 1.—Female Ward.—D trap on floor.

No. 2.—Ditto —Bell trap on floor.

No. 3.—Ditto —Trap on floor.

No. 4.—Ditto —Bell trap on floor, bell not in its place at the time of my visit.

No. 5.—Female Ward.—The drainage pipe from the floor above discharges over a trap on the floor of the Lavatory.

No. 6.—Female Ward.—Trap on Lavatory floor.

No. 7.—Ditto —Bell trap on Lavatory floor.

No. 8.—Ditto —D trap on Lavatory floor.

No. 9.—Ditto —Same arrangement.

In the Washhouse there is a drain trap on the floor, but as the room is very large and the doors are kept open, the arrangement is of little consequence, though it would be better to have such trap outside and all slops carried outside by means either of an open channel or a disconnected pipe.

In Mr. Knight's kitchen are a bell trap on the sink, and another bell trap under it at the floor level, which I need not say is a very dangerous form of slop disposal.

Mr. Green's servant's closet, which is out of doors, has no water, and is in need of repair.

The drainage in Mr. Green's kitchen is arranged on the same defective model as that in Mr. Knight's, and in the area outside the kitchen is a bell trap, which contained no water, but was filled with sand, and was therefore no safeguard against the escape of sewer gas.

The Dead House is very conveniently arranged, is well kept, and is freely open to the yard by large folding doors, which are kept wide open when it is not occupied, which it, however, often is. There is a trapped drain upon the

floor. The Dead House forms a part of the main building, and is connected with the corridor by two doors, one of which is situated near the kitchen door.

The connection of the Dead House with the main building, its communication with the corridor by two doors, and its nearness to the kitchen, are all objectionable.

In my opinion it is desirable

- 1.—That no upper room should drain into a lower one.
- 2.—That no room should have a drain pipe opening into it (or out of it) directly connected with the under-ground drain, whether such drain pipe be trapped or not in the room, but that all such waste pipes should discharge into the open air as soon as possible after reaching the exterior of the building.
- 3.—That all water closet soil pipes should be ventilated by means of a pipe equal in diameter to the soil pipe continued upwards to the roof of the building, and terminate clear of all windows, and by a further opening at the ground level as shown in the accompanying drawing (L and M).
- 4.—That in any case where cross ventilation between water closet or lavatory and the ward can be secured or improved, as in No. 7 Men's Ward, the same should be done.
- 5.—That the Dead House should be a detached building, but as long as it is retained in its present position the drain opening should be removed to the exterior of the building, the two doors connecting it with the corridors should be bricked up, and entrance to it obtained only from the yard.

I remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D.,

Medical Officer of Health.

The suggestions comprehended or implied in the above reports have been largely if not entirely acted upon in the case of the Workhouse, and in that of the Borough Lunatic Asylum every suggestion was received in the best possible spirit, and carried into effect in the most expeditious and efficient manner.

iv. *Outbreaks of Infectious, Contagious, or Epidemic Diseases.* It cannot be properly said that there has been any distinct outbreak of such disease in the Borough during 1880, unless the occurrence of the 18 cases of Small-Pox over the four quarters of the year be so called. Whooping Cough, Measles, Diphtheria, and Diarrhoea have all existed more or less during the whole of the year, with the usual recrudescence of Diarrhoea in the summer quarter. Whooping Cough has been largely prevalent, and Diarrhoea has been unusually severe, but nothing has been done specially for these cases except the issue of posters and handbills conveying information as to the prevention and treatment of Diarrhoea. Whooping Cough has never yet been systematically provided for by the public Sanitary Authority; indeed, Small-Pox and Scarlatina are the only Zymotics which the Borough Hospital is arranged to receive.

The other agencies employed to arrest the spread of infectious disease are the disinfection, whitewashing, repapering, and cleansing of houses in which cases have occurred, and the removal and disinfection of articles of furniture and clothing which might be supposed to need such precautionary treatment.

v. *Examination of and action in regard to suspected, diseased, or unwholesome food.* On numerous occasions during the year I have been called upon by the Superintendent of Markets and Fairs to examine and give evidence

upon diseased carcases and meat, unwholesome fish, fruit, &c., and the action of the inspectorial staff has resulted in the seizure of a large amount of food dangerous and unfit for consumption.

The total weight of Meat, Fish, and Fruit destroyed during the year, because of its unfitness for human food, amounts to upwards of 89 tons, viz., 65 tons of Meat, 12 of Fish, and 22 of Fruit. Full particulars are given in Table VI.

vi. *Duties under Sanitary Bye-laws and Regulations.* These refer to Common Lodging Houses, Houses let in Lodgings, Slaughter Houses, Dairies, Cow Sheds, and Milk Shops. The number of registered Common Lodging Houses is 104, which in the aggregate are legally entitled to accommodate 2,200 lodgers. They have been very regularly and carefully inspected during the year, no less than 10,364 visits having been made during the day and 3,182 during the night. The day-visits are all made by one Assistant-Inspector, specially engaged upon this work; the night visits are made by all the Assistant-Inspectors in turn, four of them taking the work one night in each week. As they are able thus to inspect 60 of the houses in one week, every Common Lodging House would be seen during the night time at least once in the fortnight; some of the establishments, however, are so thoroughly well managed and respectable, that they require to be visited less frequently, and thus more attention is given to those in which an infringement of the Bye-laws is the more likely to occur. As a proof of the excellent effect of sanitary supervision, it may be mentioned that not a single death from or case of infectious disease was reported as occurring in any of the Common Lodging Houses during the whole year.

The number of Houses let in Lodgings registered under the Public Health Act of 1875 is 164, and these are allowed to receive 963 lodgers, or an average of nearly six per house. Only one Assistant Inspector is engaged in the visitation of this class of houses, and owing to the difference of their circumstances no night visits are made to them.

The number of

SLAUGHTER-HOUSES

in the Borough remains exactly the same as that in 1879, viz., 280, of which 155 are licensed, and 125 registered.

I consider that the Markets and Fairs Committee has exercised a wise discretion in not allowing an extension of private slaughter-houses. They are so apt to be badly situated, and carelessly used, and they afford such extraordinary facilities for the reception and disposal of diseased animals and carcases that I am strongly convinced of the undesirability of increasing their number. It is greatly to be wished that the Council could see its way to the establishment of a first-class abattoir, where sanitary arrangements could have full scope, animals could be slaughtered in the best manner, and an efficient watch could be easily kept on all the meat consumed in the Borough. With 280 private slaughter-houses such supervision is entirely out of the question, and the result is that much diseased and filthy animal food is surreptitiously brought into consumption.

DAIRIES, COW SHEDS, AND MILK SHOPS.

A considerable change for the better is reported to have taken place under the Contagious Diseases (Animals) Act, in the cleanliness and ventilation of the Cow Sheds, and in the condition of the Shops where milk is stored and sold. Numerous Milk Shops have been closed on account of their being deficient in proper accommodation for the storage of milk, and several have

been reported to me where infectious disease or sanitary defects existed. I need not say that in all such cases the necessary action has at once been taken.

The following is a copy of the Bye-laws relating to Dairies, Cow Sheds, and Milk Shops, a copy of which has been supplied to every person engaged in the trade in the Borough.

BOROUGH OF BIRMINGHAM.

The Dairies, Cow Sheds, and Milk Shops Order of 1879.

RULES, REGULATIONS, AND CONDITIONS, PRESCRIBED BY THE LOCAL AUTHORITY, AND REQUIRED TO BE OBSERVED BY THE OCCUPIER OF EVERY REGISTERED COW SHED, DAIRY, OR MILK SHOP WITHIN THE BOROUGH.

Every occupier of a Dairy, Cow Shed, or Milk Shop, must be duly Registered in the Register Book kept for that purpose by the Local Authority, at the Office of Mr. Joseph Birekley, the Chief Inspector in the Smithfield Market.

No Cow Shed shall be Registered until provision has been made therein for at least 600 cubic feet for each animal to be kept therein, or a superficial space not less than three feet six by seven feet for each Cow, or if two Cows are kept together, then the space may be six feet by seven feet. The passage in the cowshed shall, for each Cow, be of the width of three feet, but if the Cows are arranged as in a double Cow Shed, then the partition passage may be four feet wide.

No Cow Shed shall be underground or below the ground-floor level.

Every occupier of a Cow Shed shall be subject to the following Regulations, namely:—

1.—He shall, to the satisfaction of the Local Authority or their Chief Inspector, Mr. Joseph Birekley, cause the same to be well and sufficiently ventilated, lighted, paved, and drained.

2.—He shall cause the same to be thoroughly whitewashed, with quick lime, at least twice in each year, namely, in the months of February and August, and keep the interior surface of the walls, and the floor or pavement in good order and repair.

3.—He shall provide a proper place for the storage of fodder, and if Brewers' grains be used as food, a covered receptacle, made of impervious material for the storage of the grain shall be provided, such receptacle to be situated outside the Cow Shed, to be properly drained and to be sub-divided into two parts by a partition, so that each part may be thoroughly cleansed in turn and be kept free from any offensive smell.

4.—He shall provide a suitable water-tight pit on the outside thereof for the deposit of manure, and cause the same manure to be removed at least once in each month, or oftener if deemed necessary.

5.—He shall keep the drainage in proper order, and keep a good supply of wholesome water on the premises.

6.—He shall not allow the Cow Shed to be used for any purpose other than that for which it is Registered, or keep or permit to be kept therein any fowl, pig, horse, dog, or any other animal, except cattle.

7.—He shall not allow any water-closet, privy, cesspool, or urinal to be within or communicate directly with such Cow Shed.

8.—Every occupier of a Cow Shed, Dairy, or Milk Shop shall, as a Notice of the Registration thereof, use a Plate or Notice Board to be supplied by the Local Authority, and for which, in the case of a Cow Shed, he shall pay a Fee of Five Shillings, and in the case of a Dairy or Milk Shop, a Fee of Two Shillings and Sixpence, such Plate or Notice Board shall have the words Cow Shed, together with the Registered number thereof and the number of Cows allowed to be kept therein, or in the case of a Dairy the word Dairy, or in the case of a Milk Shop the words Milk Shop, with the Registered number thereof respectively, as the case may be, painted in legible characters, and every such occupier shall affix such Plate or Notice Board on, over, or adjoining to the outside of the door or entrance to such Cow Shed, Dairy, or Milk Shop, and shall at all times keep and maintain the same clean and in good order, and free from any defacement or obliteration; and every occupier of a Cow Shed shall cause a copy of these Regulations to be affixed in some conspicuous place within such Cow Shed.

9.—Every occupier of a Cow Shed shall give twenty-four hours notice to Mr. Joseph Birekley, the Chief Inspector of the Local Authority, of his intention to remove from the same any Cow for the purpose of being slaughtered for the food of man.

10.—Every occupier of a Cow Shed, Dairy, or Milk Shop shall cause his premises, and all vessels used therein for containing Milk, at all times to be kept thoroughly clean, and shall use all means to protect the Milk from infection or contamination.

11.—If at any time disease exists among the Cattle in a Dairy or Cow Shed, or other building or place, the Milk of a diseased Cow therein—

(A) Shall not be mixed with other Milk ; and

(B) Shall not be sold or used for human food ; and

(C) Shall not be sold or used for food of Swine or other animals, unless and until it has been boiled.

12.—It will be unlawful for any person following the trade of Cow-keeper or Dairyman, or Purveyor of Milk, or being the occupier of a Milk Store or Milk Shop, to allow any person suffering from a dangerous infectious disorder, or having recently been in contact with a person so suffering, to milk Cows or to handle vessels used for containing Milk for sale, or in any way to take part or assist in the conduct of the trade or business of the Cow-keeper, Dairyman, or Purveyor of Milk, or occupier of the Milk Store or Milk Shop, as far as regards the production, distribution, or Storage of Milk, until all danger therefrom of the communication of infection to the Milk, or of its contamination, has ceased, which must be certified by the Medical Officer of Health for the Borough.

13.—It shall not be lawful for a person following the trade of Cow-keeper, or Dairyman, or Purveyor of Milk, or being the occupier of a Milk Store or Milk Shop, to use a Milk Store or Milk Shop in his occupation, or permit the same to be used, for any purpose incompatible with the proper preservation of the cleanliness of the Milk Store or Milk Shop, and of the Milk vessels and Milk therein, or in any manner likely to cause contamination of the Milk therein.

14.—Every new Cow Shed shall be a detached building, and not within 20 feet of any dwelling-house or other inhabited building, and shall be provided with a paved passage behind the manger at least three feet in width.

15.—Every Dairy shall be well paved with asphalte, ironstone bricks, or flag-stones, laid on concrete and set in cement, the inner walls and all woodwork shall be covered with hard, smooth, impervious material, to the height of six feet from the ground.

16.—The Dairy shall have no direct communication with any inhabited dwelling-room, and there shall not be within it any drain or other communication with a sewer, nor any water-closet or privy within or contiguous to it.

17.—The Dairy shall at all times be kept clean, and in good order and repair, and it shall not be used for any other purpose than that for which it is registered.

18.—Every Dairy shall be provided with a sufficient number of tables of slate, marble, galvanized iron, or other impervious material, for the reception of the vessels containing Milk, all of which shall be thoroughly washed and cleansed every morning and evening after the Milk shall have been sent out.

19.—Any person who shall intend to establish the business of a Dairyman or Cow Keeper, or to rearrange the premises in which the business has theretofore been carried on, shall make application to the Local Authority for their sanction and approval, and with such application shall furnish a plan of the proposed new premises, or the premises proposed to be rearranged, and sections of the building in which it is proposed to carry on such new or newly-arranged business, drawn to the scale of $\frac{1}{4}$ inch to the foot, and showing the provisions proposed to be made for the drainage, lighting, ventilation, and water supply of the same ; and shall also furnish a key-plan of the locality, showing the buildings and streets within 100 yards of the premises, drawn to the scale of five feet to the mile.

20.—Every occupier of a Cow Shed, Dairy, or Milk Shop, shall allow any member of the Local Sanitary Authority, in addition to all other persons lawfully entitled to admission, to have free access to every part of the business premises at all reasonable hours.

21.—The above Rules, Regulations, and Conditions, must be observed by the occupiers of all Cow Sheds, Dairies, or Milk Shops within the Borough, and the breach or non-observance of the same will be treated as an offence against the Order, and subject the occupier to the penalty or penalties to be recovered for such breach or non-observance, and the proceedings to be taken before the Justices in respect thereof.

22.—Every person offending in any of the matters aforesaid will be liable to a penalty of Twenty Pounds, or such other penalty as the party offending may be liable to under the Contagious Diseases Animals Act, 1878, or as the Justice or Justices of the Peace before whom any proceedings may be taken in respect of the breach or non-observance of any of the foregoing Rules, Regulations, and Conditions, may adjudge and determine.

Dated this Second day of April, 1879.

By order of the Local Authority.

EDWIN JOHN HAYES,

Town Clerk's Office,
Council House, Ann Street,
Birmingham.

Town Clerk.

vii. *Offensive Trades.* Private Slaughtering, Knackery, Tanning, Artificial Manure Manufacture, Animal Charcoal Burning, Tallow Melting, Varnish Boiling, and Chemical Manufactures are the principal industries included under this head.

The Slaughter-houses I have already referred to under another heading.

There is only one Knackery in Birmingham, and this I have very often had occasion to visit. Besides the slaughtering of horses which is conducted here, the flesh is boiled for the preparation of cat and dog meat, and white leather is also manufactured. The portion of the work that requires most precaution is the boiling of the flesh, as the steam rising from the boilers has an odour which is certainly objectionable. I can testify, however, from repeated observations, that by a good condensing arrangement, no steam escapes into the air, the greatest cleanliness is observed in all the processes, and in no instance have I been able to detect any nuisance to the neighbourhood.

Tanning is not carried on to a very large extent in Birmingham, and I have not received any complaint respecting it.

My attention has on several occasions been called to the disagreeable effluvia given off from certain Artificial Manure Works, and it cannot be denied that the odour is very objectionable and disgusting, and to that extent, no doubt, injurious to health, more particularly in the case of delicate persons; but on making careful inquiries in the surrounding neighbourhood, I have not hitherto been able to discover that the public health in the vicinity could be shown generally to have suffered, as indicated by either an excess of Zymotic disease or an increased mortality.

I know of only one establishment for the preparation of Animal Charcoal which existed during the year. Owing to a complaint concerning it, I visited and examined it, and found that it was very defective in operation. On representing the facts to the owner, he preferred discontinuing the manufacture to setting the plant in order, and it has been abolished.

The nuisance arising from Tallow Melting is one which exists to a minor extent only, the refiners generally having endeavoured to reduce the inevitable nuisance to a minimum by the adoption of the best available means, and with much success.

One of the Varnish Works of the town was reported to me as being a nuisance, and I visited and carefully examined the arrangement of the apparatus. While I found that every effort was made to carry on the process in the best possible manner, I failed to discover any serious nuisance.

Several Chemical Works have been complained of as constituting a nuisance, and I have in each case fully enquired into the circumstances. The proprietors or managers have in every instance displayed a willingness to adopt measures to mitigate the evil, and my suggestions have been not only listened to but acted upon.

It is a very difficult matter to lay down any strict rule as to the management of offensive trades; restrictions of too severe a character would only succeed in bringing a remedy by driving manufacturers out of the town, and the only feasible principle of action of a Sanitary Authority is that which requires that the particular industries shall be conducted in the best possible manner. This is the line I have always pursued, and, I think, with a very fair measure of success.

viii. *Fortnightly Reports of the Medical Officer of Health to the Health Committee.*

At each meeting of your Committee I have presented a Report on various subjects, embracing—

1. The general health of the Borough, including the total death-rate, Zymotic death-rate, and average age at death.

2. The occurrence of Infectious disease, and the results of the investigation of certain of the most dangerous cases.
3. The waters supplied from shallow wells and by the Corporation.
4. Articles of Food, Drink, and Drugs obtained for analysis.
5. Diseased and unwholesome Food.
6. Reports on special questions in pursuance of resolutions, instructions, and otherwise.

BOROUGH HOSPITAL.

This Institution, which is limited to the treatment of Small Pox and Scarlet Fever, has received during the year 170 cases of Scarlet Fever and 16 cases of Small Pox, against 184 cases of Scarlet Fever and 4 case of Small Pox in 1879.

The total number received is nearly the same as last year. The statement below gives the number of cases that have been treated in the Hospital in each quarter since its erection :—

DATE.				Small-Pox.		Scarlatina.		Total Cases.
1874.								
4th Quarter	...	...	...	194	...	—	...	194
(2nd Nov. to the end of the year)								
1875.								
1st Quarter	...	...	...	186	...	—	...	186
2nd "	...	...	...	169	...	—	...	169
3rd "	...	...	...	53	...	13	...	66
4th "	...	...	...	12	...	7	...	19
Totals	...	...	...	420	...	20	...	440
1876.								
1st Quarter	...	...	...	2	...	1	...	3
2nd "	...	...	...	2	...	4	...	6
3rd "	...	...	...	2	...	5	...	7
4th "	...	...	...	5	...	28	...	33
Totals	...	...	...	11	...	38	...	49
1877.								
1st Quarter	...	...	...	4	...	20	...	24
2nd "	...	...	...	19	...	7	...	26
3rd "	...	...	...	15	...	13	...	28
4th "	...	...	...	—	...	3	...	3
Totals	...	...	...	38	...	43	...	81
1878.								
1st Quarter	...	...	...	3	...	13	...	16
2nd "	...	...	...	7	...	34	...	38
3rd "	...	...	...	12	...	139	...	145
4th "	...	...	...	7	...	238	...	245
Totals	...	...	...	29	...	424	...	444
1879.								
1st Quarter	...	...	...	1	...	60	...	61
2nd "	...	...	...	—	...	37	...	37
3rd "	...	...	...	3	...	40	...	43
4th "	...	...	...	—	...	47	...	47
Totals	...	...	...	4	...	184	...	188
1880.								
1st Quarter	...	...	...	2	...	45	...	47
2nd "	...	...	...	3	...	27	...	30
3rd "	...	...	...	8	...	36	...	44
4th "	...	...	...	3	...	62	...	65
Totals	...	...	...	16	...	170	...	186

The Hospital contains 170 beds, but not more than 41 have at any one time during the year been occupied.

The remarkable exemption of the town from extensive visitation of the diseases treated in the Hospital must be considered to be largely due to the existence of an Institution to which first cases can be removed—its *raison d'être* is especially the prevention rather than the cure of disease, and its value, therefore, is to be gauged rather by the small number of cases which we find in the community than by the large number treated within its walls.

The occurrence in the Hospital of a death certified by Mr. Bates as caused by Typhoid Fever, demands a word of explanation, inasmuch as the Institution is devoted to the treatment of cases of Small Pox and Scarlet Fever only. Mr. Bates, the Surgeon of the Hospital, informed me on enquiry that the case had no doubt originally been a mild one of Scarlet Fever, and consequently was so certified by the Surgeon in attendance; but that during convalescence the child had doubtless been seized with Typhoid Fever, from which disease the sister was suffering at the time. The early symptoms of Typhoid were looked upon as the *sequelæ* of the original complaint, instead of being perceived to be a distinct disease, which the later stages of the illness appear to have proved that it was; hence the case was sent to the Hospital as one of Scarlet Fever in an advanced stage.

It is to be much regretted that cases are not always sent to the Hospital in the very earliest instead of at the latest stage. It is only by such a course of procedure that the main object of the Hospital—prevention of further infection—can be secured. Even as a means of cure its treatment should be sought as early as possible if the full benefit of it is to be obtained, and in this particular case early admission would no doubt have saved the life of the patient, by removing her in time out of the conditions which produced the Typhoid Fever.

The Institution is regarded much more favourably by the public than at its first establishment. Experience of its advantages has driven away suspicion and distrust and given rise to confidence. There is much less difficulty than formerly in persuading people to avail themselves of it, and but for the circumstance that very little Small Pox or Scarlet Fever has prevailed during the year, I have no doubt the number of patients treated there would have been very much greater. The planting and laying-out of the ground constitute a great improvement, imparting an attractive and cheerful aspect to the place.

It having come to my knowledge that an improper use was being made of cabs for conveying patients to the Borough Hospital, I issued the following circular to the medical profession.

MEDICAL OFFICER OF HEALTH'S DEPARTMENT,
COUNCIL HOUSE,

February 17th, 1880.

DEAR SIR,

In several instances recently, persons suffering from Scarlet Fever have been sent to the Borough Hospital in common cabs, a practise so dangerous as a means of spreading infection that I beg to remind you of the arrangement of the Health Committee, by which special ambulance accommodation is provided for such cases (Scarlatina and Small-Pox) as are removed into the Hospital. A note or certificate respecting cases for removal sent to me will always receive immediate attention.

I remain, Dear Sir,

Yours faithfully,

ALFRED HILL, M.D.,

Medical Officer of Health,

Where it has been ascertained that persons suffering from infectious disease have been conveyed in cabs, such vehicles have at once been subjected to a process of disinfection.

DISINFECTING STATION.

The articles disinfected during 1880, number 2,562, as compared with 4,378 in 1879, and comprise—

	1880.	1879.	1878.
Bolsters and Pillows	317	586	899
Mattresses	229	339	290
Blankets	113	241	353
Beds	128	221	466
Sheets	73	192	424
Counterpanes	70	154	262
Other Articles	1632	2645	4282
Total	<u>2,562</u>	<u>4,378</u>	<u>6,976</u>

The estimated cost of the Station during the year is—

	£	s.	d.
Wages	135	4	0
Horse Keep, Shoeing, &c.	46	16	0
Gas for Heating and Lighting	8	7	11
Coal	4	2	7
Water	2	0	0
	<u>£196</u>	<u>10</u>	<u>6</u>

The expenses of management have declined a little during the last two years, owing to the smaller amount of work done, in consequence of the diminution of infectious diseases in the town.

MORTUARIES.

The bodies received at the several Mortuaries during the year amount to 52, against 71 in 1879.

The following statement shows the number of bodies deposited at each Mortuary during 1879 and 1880 :—

	1879.	1880.
Moor Street	28	15
Duke Street	11	12
Kenion Street	14	10
Ladywood Road	12	7
Moseley Street	6	8
Total	<u>71</u>	<u>52</u>

WATER SUPPLY.

All the sources of this supply have continued to receive the attention which their sanitary and general importance demand. I have made, as heretofore, each month an analysis of the water supplied by the Corporation, and am much pleased to be in a position to report that, notwithstanding the difficulties and accidents attendant upon the conduct of so great a work as the water supply of the Borough has become, the distribution has been only occasionally interrupted, and then only in unavoidable cases, such as the replacing of mains or other work necessary to the efficiency and improvement of the service.

The chemical quality of the water continues to manifest a steady improvement as to the organic matter, which is the most important constituent of a water used for domestic purposes. A reference to Table XV. will prove that the average annual results for the six years from 1875 to 1880 inclusive show an uninterruptedly progressive improvement in the amount of both the Organic Carbon and the Organic Nitrogen, the former of which has fallen from .285 to .205, and the latter from .082 to .036 or considerably less than half. As the filtering beds become extended and improved upon, the reservoirs more effectually protected, and other measures of amelioration are adopted, such as the Water Committee are constantly directing their attention to, the quality of the water may be confidently expected to improve.

Of those portions of the water supply which are derived from shallow wells belonging to private owners, I analysed during last year 381 samples, collected by an Assistant Inspector, specially deputed to collect samples. I have so frequently remarked in previous reports upon the unfitness of these well waters, that any description of their special qualities is here unnecessary. Suffice it to say, that the great majority of the samples analysed were found to be much contaminated, and after a friendly and judicious communication with the owners from the Health Sub-committee, and very often a conference, the wells in nearly all cases were closed, without either litigation or much difficulty.

The analytical results of the chemical examination of the various waters are contained in Table XV., a reference to which will show that in connection with a large number of the Wells infectious disease existed.

Besides the above examinations, I have made a number of miscellaneous analyses, including some samples of Water, amounting to 72, and making a total of 435 Sanitary Analyses, independent of Food examinations.

PUBLIC BATHS.

The Return for the last year shows that the total number of bathers at the three baths belonging to the Corporation was greater than in any previous year embraced by the returns.

RETURN OF THE NUMBER OF BATHERS AT EACH OF THE CORPORATION BATHS FOR THE LAST SEVEN YEARS.

KENT ST.				WOODCOCK ST.			NORTHWOOD ST.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
1874	77138	4796	81934	47317	1889	49206	80801	2899	83700
1875	105162	4931	110093	73341	2055	75396	100858	2827	103685
1876	107647	4880	112527	76781	2451	79232	99941	2832	102773
1877	95428	4397	99825	58432	2012	60444	83844	2153	85997
1878	106820	6016	112836	64680	2171	66851	101059	2129	103188
1879	105395	7274	112669	48794	1501	50295	82408	2027	84435
1880	108253	8468	116721	71843	2051	73894	115446	3166	118612

I am glad to record the much greater use of the baths during last year. This is no doubt largely owing to the summer being a somewhat warmer one, just as the unusually small number of bathers in the previous year was probably due to the year being exceptionally cold and dull.

SEWERAGE WORKS.

During the year 1880 $2\frac{1}{2}$ miles of Sewers were constructed by the Corporation in Public Highways, or underneath private lands, and in addition thereto several Sewers have been constructed in undeclared Highways.

The length of Sewers under the charge of the Council in Streets taken to or in Streets recently completed and underneath private lands is about $175\frac{1}{2}$ miles.

STREETS AND ROADS.

The length of Streets and Roads in the Borough at the end of 1880 was $196\frac{3}{4}$ miles, of which 167 miles have been declared highways by the Corporation, to which should be added 19 miles completed and under their care, though not formally declared highways, leaving $10\frac{3}{4}$ miles undeclared highways to be completed. $15\frac{1}{2}$ miles of carriage-ways are now paved, and $2\frac{1}{4}$ miles on a portion of one of the Tramway routes is partly paved and partly macadamised.

NIGHTSOIL AND REFUSE DISPOSAL.

The work of conversion of the objectionable and injurious midden privies to pan closets continues to make progress.

At the end of the year 31,925 Pans were in use in the Borough; the number of Pans collected during the year was 1,621,360, while 69,256 loads of ashes were removed from the tubs. A considerable number of the old midden privies, however, still remain, since 21,715 such privies and ashpits were emptied, and 71,402 loads of ashes, etc., were removed from them.

The method of treatment of the material at the Wharves and its disposal have undergone much improvement, especially from a Sanitary point of view.

SANITARY WORK

of all kinds has been vigorously prosecuted during the year, no less than 6,647 notices having been issued for the removal of nuisances.

Nearly 1,500 drains have been trapped, 690 sinks disconnected from the drain, 1,361 houses disinfected and cleansed, 150 privies reconstructed, and 1,004 accumulations of manure, wash, and other deposits of filth removed. The work effected also comprises the clearing from obstruction of 1,639 drains, the repairing of 1,536 ashpits and privies, the paving of 386 yards or courts, and the closing of 30 houses reported unfit for human habitation.

Full details of the work of the Inspection Department are given in Table VI.

CANAL BOATS ACT, 1877.

Nearly all the boats passing along the various canals in the Borough having been registered in the two years following the passing of the Act, the number of applications for registration fell last year to thirty-six. In consequence of the construction of the dwellings being in conformity with the demands of the Act, certificates of registration were granted in each case.

In framing the foregoing Report I have made some alterations in the arrangement of the subjects so as to bring it more into conformity with the suggestions contained in the Order of the Local Government Board as to the Annual Reports of Medical Officers of Health. I hope in my next Report, when armed with the valuable statistics of the forthcoming Census, to make further considerable modifications of and additions to the statistical tables—particularly with regard to the distribution of disease between the sexes and at the different periods of life, which at present I am unable to do.

I have to record with regret that Mr. Booker, the late Inspector of Nuisances, was compelled by ill-health to resign his office. Mr. Dale, Inspector of Nuisances at Hull, has been appointed to the vacant post, but has not yet permanently entered upon his duties.

It is with pleasure I acknowledge the courtesy and support I have received from your Committee, in common with other Committees under whom I have been called upon from time to time to act, and the willing and valuable assistance at all times of my colleagues and the officials generally.

I have the honour to remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D.,

Medical Officer of Health.

III. APPENDIX.

(TABLES, MAP, AND CHART).

TABLE I.
BIRTHS & DEATHS (GROSS NUMBERS).

DATE.	BIRTHS.	DEATHS.
1880	15,111	8,088
1879	15,846	8,650
1878	15,964	9,662
1877	16,001	9,038
1876	15,816	8,330
1875	14,862	9,668
1874	14,888	9,665
1873	14,497	8,990
1872	14,123	8,048
1871	13,443	8,594
1870	12,922	7,805
Average of Ten years } 1870—1879	14,836	8,844

NOTES.

- 1.—Population at Census, 1871, 343,787.
- 2.—Population, estimated to the middle of the Year 1880, 394,738.
- 3.—Area in Acres, 8,400.
- 4.—Number of Inhabited Houses in Borough at Census 1871, 68,532.
- 5.—Average number of Persons in each House at Census 1871, 5·0.

TABLE II.
ANNUAL RATE OF MORTALITY, DEATH RATE AMONG CHILDREN, AND DEATHS IN PUBLIC INSTITUTIONS.

DATE.	Annual rate of Mortality per 1,000 Living.	Deaths of Children under 1 year; percentage to total Deaths.	Percentage of Deaths of Children under 1 year to Registered Births.	Deaths of Children under 5 years; percentage to total Deaths.	Percentage of Deaths in Public Institution.
1880	20.5	32.1	17.8	49.9	12.4
1879	21.8	27.5	15.0	49.7	14.1
1878	25.2	28.6	17.0	53.1	11.8
1877	23.9	29.1	16.4	49.4	12.2
1876	22.4	30.5	16.0	46.6	11.6
1875	26.3	30.6	19.6	49.4	11.8
1874	26.8	27.8	17.8	47.5	11.8
1873	24.8	29.2	18.1	49.2	11.6
1872	23.1	29.1	16.6		12.0
1871	24.9	29.7	19.0		10.9
1870	23.0	29.9	18.1		11.4
Average of 10 years 1870—1879	24.3	29.2	17.4		11.9

DEATHS REGISTERED IN THE BOROUGH OF BIRMINGHAM,
During the Year ending JANUARY 1st, 1881.

ESTIMATED POPULATION OF THE BOROUGH IN THE
MIDDLE OF THE YEAR 1880—394,738.

During the Year ending JANUARY 1st, 1881.

[illegible]

TABLE IV.

Mortality from certain classes of Diseases, and proportions to population and to 1,000 deaths in 1880.

CLASS OF DISEASES.	Total Deaths.	Death Rate per 1,000 of the population.	Proportion of Deaths to 1,000 Deaths.
1.—Seven principal Zymotic Diseases	1,324	3·4	163
2.—Pulmonary (other than Phthisis)	1,791	4·5	221
3.—Tubercular 	917	2·3	113
4.—Wasting Diseases of Infants ...	845	2·1	104
5.—Convulsive Diseases of Infants ...	490	1·2	61

NOTES.

- 1.—Includes Small-Pox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever, and Diarrhoea.
- 3.—Includes Phthisis, Scrofula, Rickets, and Tabes.
- 4.—Includes Marasmus, Atrophy, Debility, Want of Breast Milk, and Premature Birth.
- 5.—Includes Hydrocephalus, Infantile Meningitis, Convulsion, and Teething.

TABLE VI.—*Continued.*

WELL WATERS.

No. of Well Waters submitted by the Inspector for analysis	381
No. of Wells reported as polluted	377
No. of Wells closed	358
No. of Premises supplied with Tap Water	341
No. of Persons dealt with by the Magistrates	55
Amount of Costs	£9 18 2

COMMON LODGING HOUSES.

Number of Houses Registered	104
Number of Lodgers allowed in the Houses	2,200
Number of Visits by day	10,364
" " night	3,182

HOUSES LET IN LODGINGS.

Houses Registered under the Public Health Act, 1875	164
Number of Lodgers allowed	963

SMOKE NUISANCE.

No. of Registered Proprietors of Furnaces or Fireplaces used for manufacturing purposes	1,191
No. of Chimneys	1,574
No. of Notices served for the abatement of Nuisances	455
No. of Observations of Chimneys made by the Inspectors	8,069
No. of Manufacturers reported for the emission of dense smoke	292
No. Cautioned	230
No. Summoned	60
No. Convicted	59
Amount of Penalties	£36 5 0
" Costs	23 18 6

SLAUGHTER HOUSES.

(Return made by MR. BIRCKLEY, Superintendent of the Markets.)

No. of Slaughter-Houses	280
No. of Visits	15,051
Seizures of Bad Meat	471
Weight Destroyed	64 tons, 10 cwt., 3 qrs., and 26lbs.
Seizures of Fish, &c.	111
Weight of Fruit, &c., seized	22 tons, 1 cwt., 3 qrs., 9lbs.

CONTAGIOUS DISEASES (ANIMALS) ACT.

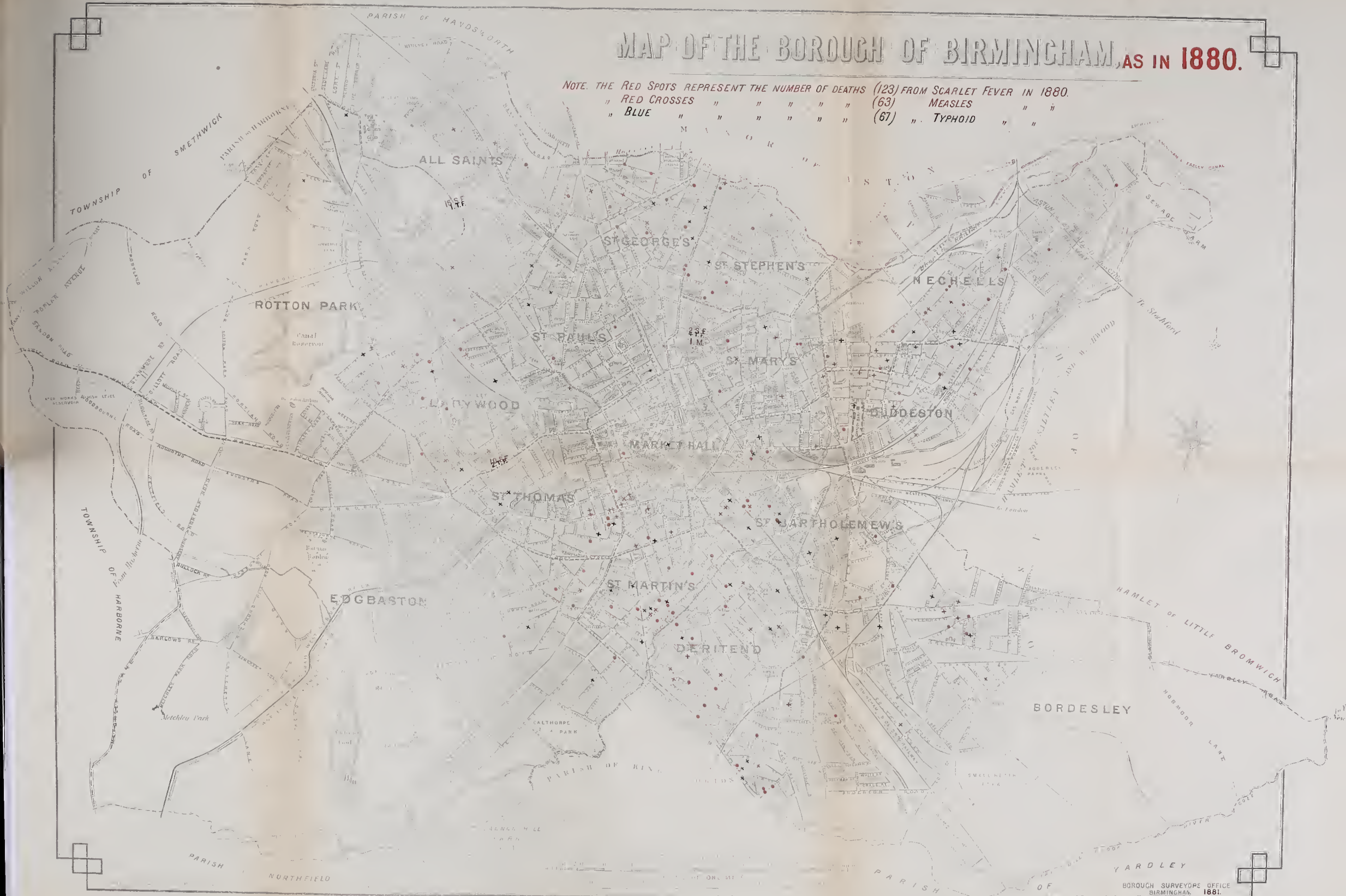
(Return made by MR. BIRCKLEY, Superintendent of the Markets.)

No. of Visits to Milk Shops	3,127
No. of Visits to Railway Stations	1,587
No. of Visits to Cow Houses	1,562
No. of Milk Shops under Inspection	1,543
No. of Dairies	61
No. of Cows in Cow Sheds	3,000

MAP OF THE BOROUGH OF BIRMINGHAM, AS IN 1880.

NOTE. THE RED SPOTS REPRESENT THE NUMBER OF DEATHS (123) FROM SCARLET FEVER IN 1880.

"	RED CROSSES	"	"	"	"	"	(63)	MEASLES	"	"
"	BLUE	"	"	"	"	"	(67)	" TYPHOID	"	"



QUARTERLY SHEET FOR 'THE WHOLE YEAR.'

From DECEMBER 29th, 1879, to DECEMBER 28th, 1880.

[illegible]

DEATHS REGISTERED IN THE BOROUGH OF BIRMINGHAM,
During the Quarter ending APRIL 3rd, 1880.

Estimated Population of the Borough in this
Month of the Year 1880—394,738.

CAUSES OF DEATH.		SEX TOTAL.		AGES.							ESTIMATED POPULATION OF EACH OF THE REGISTRAR'S SUB-DISTRICTS.										THE BOROUGH Total																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
											LADYWOOD, 51,814.	ST. THOMAS, 42,941.	ST. MARTIN'S, 43,976.	ST. GEORGE'S, 68,899.	ALL SAINTS, W.L. 43,887.	DENTON, 68,130.	DUDDESBURY, 53,025.	EDGASTON, 22,156.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
CLASS I.—Zymotic Diseases.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
ORDER 1.—MIASMATIC.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
1	Small-pox { Vaccinated Not vaccinated	20	30	7	4	11	15	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

During the Quarter ending JULY 3rd, 1880.

During the Quarter ending JULY 3rd, 1880.

MIDDLE OF THE YEAR 1880—394,738.

SEX TOTAL.		AGES.							ESTIMATED POPULATION OF EACH OF THE REGISTRAR'S SUB-DISTRICTS.																															
		0 and under 1		1 and under 5		5 and under 10		10 and under 20		20 and under 40		40 and under 60		60 and under 80		80 and upwards																								
CAUSES OF DEATH.														LABWOOD, H.	ST. THOMAS, H.	ST. MARTIN'S.	ST. GEORGE'S, H.	ALL SAINTS, W.L.	DERBYSD.	DUDDESD.	FLEETSTON.	QUARTERLY TOTAL OF THE BOROUGH																		
CLASS I.—Zymotic Diseases.																																								
ORDER 1.—MIASMATIC.																																								
1. Small-pox { Vaccinated .. { Not vaccinated ..																																								
2. Measles ..																																								
3. Scarlatina ..																																								
4. Diphtheria ..																																								
5. Quinsy ..																																								
6. Group ..																																								
7. Whooping Cough ..																																								
8. Typhus ..																																								
9. Enteric or Typhoid Fever ..																																								
10. Simple continued Fever ..																																								
11. Puerperal Fever (Metria) ..																																								
12. Carbuncle ..																																								
13. Influenza ..																																								
14. Dysentery ..																																								
15. Cholera ..																																								
16. Diarrhea ..																																								
17. Remittent Fever ..																																								
18. Rheumatism ..																																								
19. Other Zymotic Diseases ..																																								
ORDER 2.—ENTHETIC.																																								
1. Syphilis ..																																								
2. Stricture of Urethra ..																																								
3. Hydrophobia ..																																								
4. Glanders ..																																								
ORDER 3.—DIETIC.																																								
1. Privation ..																																								
2. Want of Breast Milk ..																																								
3. Purgative and Stomachic ..																																								
4. Alcoholism { & Intemperance ..																																								
ORDER 4.—PARASITIC.																																								
1. Thrush ..																																								
2. Worms, &c. ..																																								
CLASS II.—Constitutional Diseases.																																								
ORDER 1.—DIATHETIC.																																								
1. Gout ..																																								
2. Dropsy ..																																								
3. Cancer ..																																								
4. Insanity ..																																								
5. Chorea ..																																								
6. Epilepsy ..																																								
7. Convulsions ..																																								
8. Brain Disease, &c. ..																																								
ORDER 2.—TUBERCULAR.																																								
1. Scrophula ..																																								
2. Tubercles ..																																								
3. Phthisis (Consumption) ..																																								
4. Hydrocephalus (Water on the Brain) ..																																								
CLASS III.—Local Diseases.																																								
ORDER 1.—NERVOUS SYSTEM.																																								
1. Cephalitis ..																																								
2. Apoplexy ..																																								
3. Paralysis ..																																								
4. Insanity ..																																								
5. Chorea ..																																								
6. Epilepsy ..																																								
7. Convulsions ..																																								
8. Brain Disease, &c. ..																																								
ORDER 2.—ORGANS OF CIRCULATION.																																								
1. Pericarditis ..																																								
2. Aneurysm ..																																								
3. Heart Disease, &c. ..																																								
ORDER 3.—RESPIRATORY ORGANS.																																								
1. Laryngitis ..																																								
2. Bronchitis ..																																								
3. Pleurisy ..																																								
4. Pneumonia ..																																								
5. Asthma ..																																								
6. Lung Disease, &c. ..																																								
ORDER 4.—DIGESTIVE ORGANS.																																								
1. Gastritis ..																																								
2. Enteritis ..																																								
3. Peritonitis ..																																								
4. Ascites ..																																								
5. Ulceration of Intestines ..																																								
6. Hemia (Rupture) ..																																								
7. Hemorrhoids ..																																								
8. Stricture of Intestines ..																																								
9. Fistula ..																																								
10. Stomach Disease, &c. ..																																								
11. Pancreas Disease, &c. ..																																								
12. Hepatitis ..																																								
13. Jaundice ..																																								
14. Liver Disease, &c. ..																																								
15. Spleen Disease, &c. ..																																								
ORDER 5.—URINARY ORGANS.																																								
1. Nephritis ..																																								
2. Ischuria ..																																								
3. Nephria (Bright's Disease) ..																																								
4. Diabetes ..																																								
5. Stone ..																																								
6. Cystitis ..																																								
7. Kidney Disease, &c. ..																																								
ORDER 6.—ORGANS OF GENERATION.																																								
1. Ovarian Dropsy ..																																								
2. Uterine Disease, &c. ..																																								
ORDER 7.—ORGANS OF LOCOMOTION.																																								
1. Arthritis ..																																								
2. Joint Disease, &c. ..																																								
ORDER 8.—INTEGUMENTARY SYSTEM.																																								
1. Pilemon ..																																								
2. Ulcer ..																																								
3. Skin Disease, &c. ..																																								
CLASS IV.—Developmental Diseases.																																								
ORDER 1.—DISEASES OF CHILDREN.																																								
1. Premature Birth ..																																								
2. Cyanosis ..																																								
3. Spina Bifida ..																																								
4. Other Malformations ..																																								
5. Tetanus ..																																								
ORDER 2.—DISEASES OF ADULTS.																																								
1. Paracrania ..																																								
2. Childbirth (see Puerperal Fever) ..																																								
ORDER 3.—DISEASES OF OLD PEOPLE.																																								
1. Old Age ..																																								
ORDER 4.—DISEASES OF NUTRITION.																																								
1. Atrophy and Debility ..																																								
CLASS V.—Violent Deaths.																																								
ORDER 1.—ACCIDENTS OR NEGLIGENCE.																																								
1. Fractures and Contusions ..																																								
2. Wounds { Gunshot .. { Cut, Stab ..																																								
3. Burns or Scalds ..																																								
4. Poison ..																																								
5. Drowning ..																																								
6. Hanging ..																																								
7. Other ..																																								
ORDER 3.—HOMICIDE.																																								
1. Murder and Manslaughter ..																																								
ORDER 4.—SUICIDE.																																								
1. Wounds { Gunshot .. { Cut, Stab ..																																								
2. Poison ..																																								
3. Drowning ..																																								
4. Hanging ..																																								
5. Other ..																																								
6. Violent Deaths (not classed) ..																																								
7. Sudden Deaths (cause undetermined) ..																																								
Causes not specified or ill defined ..																																								
Total ..														1041	851	302	241	192	149	96	27	26	33	125	104	178	122	148	155	24	80	217	168	173	362	954	330	214	54	1892

DEATHS REGISTERED IN THE BOROUGH OF BIRMINGHAM,

During the Quarter ending OCTOBER 2nd, 1880.

ESTIMATED POPULATION OF THE BOROUGH IN THE
MIDDLE OF THE YEAR 1880—394,738.

SEX		AGES.							ESTIMATED POPULATION OF EACH OF THE REGISTRAR'S SUB-DISTRICTS.		Total	
		AGES.										
TOTAL.		0 and under 1	1 and 6	5 and under 10	10 and under 20	20 and under 40	40 and under 60	60 and under 80	80 and upwards	Total		
Males.		0 and under 1	1 and 6	5 and under 10	10 and under 20	20 and under 40	40 and under 60	60 and under 80	80 and upwards	Total		
Females.		0 and under 1	1 and 6	5 and under 10	10 and under 20	20 and under 40	40 and under 60	60 and under 80	80 and upwards	Total		
CAUSES OF DEATH.												
CLASS I.—Zymotic Diseases.												
ORDER 1.—Miasmatic.												
1. Small-pox { Vaccinated (Not stated)												
2. Measles ..												
3. Scarlatina ..												
4. Diphtheria ..												
5. Whooping Cough ..												
6. Typhus ..												
7. Enteric or Typhoid Fever ..												
8. Simple continued Fever ..												
9. Erysipelas ..												
10. Puerperal Fever (Metria) ..												
11. Carbuncle ..												
12. Influenza ..												
13. Dysentery ..												
14. Diarrhoea ..												
15. Cholera ..												
16. Ague ..												
17. Rheumatism ..												
18. Other Zymotic Diseases ..												
ORDER 2.—Etiotic.												
1. Syphilis ..												
2. Stricture of Urethra ..												
3. Hydrophobia ..												
4. Glanders ..												
ORDER 3.—Dietic.												
1. Privation ..												
2. Want of Breast Milk ..												
3. Puerperal and Scurvy ..												
4. Alcoholism { 6. Delirium Tremens ..												
5. Mortification ..												
ORDER 4.—Parasitic.												
1. Thrush ..												
2. Worms, &c. ..												
CLASS II.—Constitutional Diseases.												
ORDER 1.—Diathetic.												
1. Gout ..												
2. Dropsy ..												
3. Cancer ..												
4. Noma ..												
5. Mortification ..												
ORDER 2.—Tubercular.												
1. Scrofula ..												
2. Tubercular ..												
3. Phthisis (Consumption) ..												
4. Hydrocephalus (Water on the Brain) ..												
CLASS III.—Local Diseases.												
ORDER 1.—Nervous System.												
1. Cephalitis ..												
2. Apoplexy ..												
3. Paralysis ..												
4. Insanity ..												
5. Chorea ..												
6. Epilepsy ..												
7. Convulsions ..												
8. Erata Disease, &c. ..												
ORDER 2.—Organs of Circulation.												
1. Pericarditis ..												
2. Aneurism ..												
3. Heart Disease, &c. ..												
ORDER 3.—Respiratory Organs.												
1. Laryngitis ..												
2. Bronchitis ..												
3. Pleurisy ..												
4. Pneumonia ..												
5. Asthma ..												
6. Lung Disease, &c. ..												
ORDER 4.—Digestive Organs.												
1. Gastritis ..												
2. Enteritis ..												
3. Peritonitis ..												
4. Ascites ..												
5. Ulceration of Intestines ..												
6. Hernia (Rupture) ..												
7. Ileus ..												
8. Intussusception ..												
9. Stricture of Intestines ..												
10. Stomach Disease, &c. ..												
11. Puerperal Disease, &c. ..												
12. Hepatitis ..												
13. Jaundice ..												
14. Liver Disease, &c. ..												
15. Spleen Disease, &c. ..												
ORDER 5.—Urinary Organs.												
1. Nephritis ..												
2. Ischuria ..												
3. Nephritis (Bright's Disease) ..												
4. Diabetes ..												
5. Stone ..												
6. Cystitis ..												
7. Kidney Disease, &c. ..												
ORDER 6.—Organs of Generation.												
1. Ovarian Dropsy ..												
2. Uterus Disease, &c. ..												
ORDER 7.—Organs of Locomotion.												
1. Arthritis ..												
2. Joint Disease, &c. ..												
ORDER 8.—Integumentary System.												
1. Phlegmon ..												
2. Ulcer ..												
3. Skin Disease, &c. ..												
CLASS IV.—Developmental Diseases.												
ORDER 1.—Diseases of Children.												
1. Premature Birth ..												
2. Cyanosis ..												
3. Spina Bifida ..												
4. Other Malformations ..												
5. Teething ..												
ORDER 2.—Diseases of Adults.												
1. Paranoia ..												
2. Childbirth (see Puerperal Fever) ..												
ORDER 3.—Diseases of Old People.												
1. Old Age ..												
ORDER 4.—Diseases of Nutrition.												
1. Atrophy and Debility ..												
CLASS V.—Violent Deaths.												
ORDER 1.—Accidents or Negligence.												
1. Fractures and Contusions ..												
2. Wounds { Gunshot ..												
3. Burns or Scalds ..												
4. Poison ..												
5. Drowning ..												
6. Suffocation ..												
7. Otherwise ..												
ORDER 2.—Homicide.												
1. Murder and Manslaughter ..												
ORDER 3.—Suicide.												
1. Wounds { Gunshot ..												
2. Poison ..												
3. Drowning ..												
4. Hanging ..												
5. Otherwise ..												
Violent Deaths (not classed) ..												
Sudden Deaths (cause unascertained) ..												
Causes not specified or ill defined ..												
Total ..												

Total

TABLE XII.

METEOROLOGICAL CONDITION OF THE AIR, AND AMOUNT OF RAINFALL FOR THE YEAR ENDING JANUARY 1ST, 1881.

Observed at 9.0 a.m. at The Hollies, Winson Green, by myself and Dr. A. BOSTOCK HILL.

The cistern of the Barometer is 476 feet above the level of the sea.

The other Instruments are about 473 feet above the mean level of the sea.

From the returns of the Registrar-General, the area within the Municipal Boundary of the Borough of Birmingham is taken at 8,400 acres, and the population estimated to the middle of the year, 1880, at 394,738.

1880. MONTHS.	Pressure of Air.	TEMPERATURE OF THE AIR				RAINFALL. Gauge 8 inches diameter. Receiving surface 5in. above the ground.		
	Barometer	Reading of Thermometer.				Depth of Rain deposited upon a square foot of sur- face, in inches and parts.	Measure- ment converted into weight per Acre.	Number of Days on which Rain fell, when 1/16ths of an inch or more was measured.
	Mean Monthly Reading (corrected and reduced to 32 degrees Fahrenheit)	Highest in Shade.	Lowest in Shade.	Range of Temp- erature in the Month	Mean Tempe- rature in the Month			
	In. Parts.	Dg. Pts.	Dg. Pts.	Dg. Pts.	Dg. Pts.	In. Parts.	Tons.	
Jan.	29·840	53°·5	18°·0	35°·5	33°·7	0·69	70	3
Feb.	29·576	52·0	31·0	21·0	41·0	3·12	315	16
Mar.	29·581	61·0	27·0	34·0	41·7	0·53	54	3
April	29·355	61·5	31·0	30·5	46·0	2·35	237	7
May	29·605	68·5	34·5	34·0	50·6	1·62	164	6
June	29·425	72·5	40·5	32·0	56·2	2·55	258	17
July	29·403	74·0	47·5	26·5	59·8	4·80	485	20
Aug.	29·575	80·0	44·5	35·3	60·9	0·80	81	4
Sept.	29·473	85·0	44·0	41·0	58·7	4·63	468	10
Oct.	29·414	62·0	26·0	36·0	44·0	6·38	644	11
Nov.	29·412	61·0	19·0	42·0	40·1	2·30	232	9
Dec.	29·391	53·0	27·0	26·0	41·7	3·48	351	13

PRICES OF COAL, FLOUR, POTATOES, AND BUTCHERS' MEAT, AND THE NUMBER OF PAUPERS RELIEVED IN THE PARISH OF BIRMINGHAM IN 1880.

Years.	Average Prices of Food and Fuel.				PAUPERISM.	
	Coal per ton.	Flour per 224lbs.	Potatoes per load.	Butchers' Meat per lb.	Weekly Average of Paupers relieved during the Year.	
					In-door.	Out-door.
1880	10s.	27s.	75s.	6½d.	2,415	4,825

TABLE XIII.

RAINFALL AND TEMPERATURE IN EACH MONTH AND YEAR FROM 1869 TO 1880.

COMPILED FROM OBSERVATIONS MADE AT 63, BLOOMSBURY STREET, BIRMINGHAM, BY D. SMITH, Esq., F.R.A.S.

MONTH.	1869.		1870.		1871.		1872.		1873.		1874.		1875.		1876.		1877.		1878.		1879.		Average for 11 years 1869—79.		1880.												
	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	No. of days on which 6-100ths of an inch or more was measured.	No. of days on which 6-100ths of an inch or more was measured.											
January ...	3.460	12	41.6	38.0	1.485	9	32.5	4.750	21	40.4	4.48	19	41.4	1.86	10	41.4	3.12	16	44.4	1.75	6	36.1	4.47	18	42.8	1.96	11	43.2	2.01	10	32.4	2.80	13	39.5	0.69	3	33.7
February ...	3.075	13	45.3	36.0	1.730	9	42.5	3.410	15	43.8	1.76	11	35.1	2.685	9	38.2	1.675	10	36.0	2.55	14	39.6	2.43	12	44.5	1.11	8	40.1	3.68	18	38.5	2.33	12	39.4	3.12	16	41.0
March ...	2.500	9	36.2	40.6	1.240	8	44.1	2.365	12	44.0	2.66	14	39.9	1.72	16	44.6	0.81	5	40.7	3.16	22	40.8	2.72	15	40.3	1.17	9	43.6	0.95	9	40.7	1.86	12	43.9	0.53	3	41.7
April ...	1.825	8	49.8	49.1	3.850	10	47.6	3.925	10	47.6	0.77	7	46.6	1.45	5	50.5	1.09	7	47.2	1.98	13	47.5	2.82	12	45.0	2.17	11	48.3	3.39	16	43.6	2.22	10	46.5	2.35	7	46.0
May ...	5.745	17	50.2	53.9	2.165	7	53.6	2.265	11	49.3	2.545	12	50.6	3.24	7	50.5	2.10	12	54.8	1.00	5	48.1	2.27	9	48.2	5.33	21	54.7	4.26	13	50.1	2.63	10	51.3	1.62	6	50.6
June ...	1.210	7	56.4	60.7	3.005	11	54.7	5.770	15	58.3	1.65	9	58.2	1.13	5	58.5	3.915	15	58.0	2.23	8	58.0	2.96	10	59.0	3.37	14	60.8	6.16	19	56.0	3.11	11	58.3	2.55	17	56.2
July ...	0.580	2	63.6	64.2	4.550	17	59.5	3.565	11	65.0	5.16	11	62.3	1.26	8	64.0	8.14	13	58.9	1.42	6	63.7	5.03	12	59.8	0.98	7	63.7	3.97	18	59.0	3.53	11	61.2	4.80	20	59.8
August ...	1.260	8	60.6	61.0	2.180	6	61.7	3.310	10	60.3	3.435	18	61.1	1.985	14	60.1	1.80	7	62.0	1.22	5	62.7	2.29	10	61.6	6.44	18	62.0	5.72	13	60.1	3.06	10	61.4	0.80	4	60.9
September ...	4.105	13	58.2	55.4	6.010	11	55.5	2.645	8	57.0	2.13	8	53.4	4.545	19	56.4	3.89	14	59.3	5.83	21	55.7	4.58	13	54.9	3.15	13	56.9	3.59	12	55.6	3.79	13	56.0	4.63	10	58.7
October ...	1.660	8	49.6	50.5	1.955	12	49.6	4.650	19	47.1	1.86	9	47.8	2.71	12	51.2	7.21	16	47.4	2.26	9	53.0	1.91	12	49.1	3.66	16	52.2	2.06	9	49.6	3.40	12	49.7	6.38	11	44.0
November ...	2.035	9	44.3	40.7	0.835	4	37.7	3.475	18	44.3	1.83	10	43.0	1.45	10	41.6	3.31	10	41.9	2.94	8	43.4	2.87	15	47.4	3.15	11	39.4	1.98	12	40.9	2.41	10	42.1	2.30	9	40.1
December ...	4.005	13	36.5	32.8	1.615	9	39.0	4.505	17	41.1	0.975	5	41.3	4.375	16	33.9	1.45	10	39.1	5.68	19	42.9	2.40	11	41.3	2.44	11	31.2	1.07	5	35.3	2.56	12	37.8	3.48	13	41.7
YEAR ...	31.460	119	49.3	48.5	30.620	113	49.0	45.135	167	49.8	29.255	133	48.6	28.41	131	49.0	38.51	135	49.1	32.02	136	49.4	36.75	149	49.1	34.93	150	49.6	38.84	154	46.8	33.70	136	48.9	33.25	119	48.0



TABLE XIV.

NEW CASES OF DISEASE COMING UNDER TREATMENT DURING THE YEAR ENDING DECEMBER,
28TH, 1880, AT THE FOLLOWING INSTITUTIONS, &c.

DISEASES.	I. General Hospital.	II. General Dispensary	III. Queen's Hospital.	IV. Children's Hospital.	V. The Work- house.	VI. Out-door Pauper Patients.	VII. Boro' Hosptl.	TOTAL.
Small Pox .. .. .	...	..	...	...	...	2	14	16
Measles	32	9	...	14	20	48	...	123
Scarlet Fever	16	28	...	86	...	63	170	363
Diphtheria	2	8	4	14	...	1	...	29
Whooping Cough ...	6	42	2	481	86	79	...	696
Croup	1	1	1	17	...	1	...	21
Diarrhœa.....	1,142	80	480	1,711	114	559	...	4,086
Dysentery	3	4	...	2	...	1	...	10
Asiatic Cholera .. ..	...	...	...	...	...	...	...	...
Erysipelas	31	19	16	6	1	20	...	93
Continued Fever ...	...	...	..	3	...	...	...	3
Typhus .. .. .	...	...	...	...	...	1	...	1
Enteric or Typhd.	13	35	18	19	7	4	...	96
Relapsing .. .. .	...	...	...	..	...	...	...	...
Febricula	30	15	12	169	...	315	..	541
Ague	4	1	6	...	...	1	...	12
Rheumatic Fever .	59	62	71	11	...	44	...	247
Puerperal Fever.....	...	1	...	...	...	1	...	2
Brouchitis&Catarrh.	654	1,974	469	1,496	719	1,983	..	7,295
Influenza.....	...	...	...	...	...	...	..	...
Pleurisy&Pueumonia	158	61	71	149	69	48	...	556
Phthisis	265	1,955	421	98	160	146	...	3,045
Constl. Syphilis.....	279	325	241	225	380	27	...	1,477
All other Diseases ...	17,049	12,592	7,628	9,006	3,022	5,466	...	54,763
Accidents	8,802	164	5,601	32	162	42	...	14,803
Totals.....	28,546	17,376	15,041	13,539	4,740	8,852	184	88,278

The above returns are made by (I.)—Harry Gilbert Barling, M.B., Howard Lowe, M.R.C.S., and F. A. Manillot, M.B., Esqrs.; (II.)—A. O. Holbeche, G. P. Best, B.A., M.B., F. C. P. Lowes, C. J. Lewis, Thomas Nelson, M.B., and D. Holmes, M.B., Esqrs.; (III.) J. H. Finraee, and W. H. Osborn, Esqrs.; (IV.)—Dr. A. E. Clark, L. A. Middleton, Esq., and Dr. Alice J. S. Ker; (V.)—A. B. Simpson, Esq.; (VI.)—W. G. Coulton and Walter Bowen, Esqrs., Clerks to the Guardians; (VII.)—Wm. Bates, Esq., B.A., Surgeon of the Borough Hospital.

TABLE XV.—WATER: RESULTS OF ANALYSIS

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen
1880.	CORPORATION WATER.				
Jan. 12th	16, Great Charles Street	6°·1	25·58	·163	·022
Feb. 13th	1 Court, New Canal Street	5°·5	22·40	·258	·059
Mar. 18th	113, Aberdeen Street	6°·1	26·14	·137	·048
Apr. 13th	63, Gooch Street	5°·5	28·68	·120	·057
May 12th	64, Hampton Street	10°·5	21·96	·128	·030
June 8th	12, Parker Street	12°·2	25·68	·168	·019
July 8th	4 Court, Smith Street, Bloomsbury ...	15°·6	28·36	·175	·020
Aug. 10th	1 Court, Ryland Road	16°·6	22·76	·259	·027
Sep. 8th	Rear of 2, Cape Lane, Dudley Road...	17°·8	25·04	·182	·031
Oct. 14th	33 Court, Newtown Row	11°·7	32·70	·340	·049
Nov. 12th	Rear of 30, Navigation Street	10°·0	25·50	·314	·023
Dec. 7th	4 Court, Ladywood Road	6°·6	27·42	·204	·046
	Average Results ... 1880 ...	10°·3	26·02	·205	·036
	" " ... 1879 ..	8°·2	25·34	·215	·040
	" " ... 1878 ...	10°·8	26·75	·220	·050
	" " ... 1877 ...	10°·9	25·14	·279	·051
	" " ... 1876 ...	10°·0	25·13	·266	·063
	WELL WATERS.				
Jan. 5th	347 and 348, Park Road ... ..	...	118·00	...	very large
" "	349 and 350, ditto ... ..	...	141·40	...	large
" "	112—115, Lee Bank Road ... ..	...	113·20	...	...
" "	24 Court, Bell Barn Road ... ..	...	134·60	...	...
" "	13 Court, Digbeth ... ..	...	120·80	...	very large
" "	305, Pershore Road ... ..	...	82·40	...	...
" 12th	22 and 24, William Edward Street ...	...	192·60	...	...
" "	5 Court, Hellier Street (Diarrhoea) ...	...	204·60	...	large
" "	22 Court, Geach Street ... ..	...	126·40	...	moderat
" "	30 and 32, Emily Street ... ..	...	241·60	...	large
" "	Shenstone Terrace, Oughton Place ...	...	291·60	...	"
" "	Back 11 and 12, Guildford Street ...	...	79·00	...	moderat
" 15th	282—292, Park Road ... ..	...	57·00	...	"
" "	Back Park Place, Park Road ... ..	...	102·60	...	...
" "	64 and 55, Lodge Road (Diarrhoea) ...	...	87·60	...	moderat
" "	361 and 362, Lodge Road ... ..	...	128·60	...	...
" "	112 and 113, Stratford Road ... ..	...	77·00	...	large
" "	23 and 24, Pershore Road ... ..	...	70·80	...	"
" 20th	1A, Kent Street, and 104, Wrentham Street ... ..	...	93·60	...	large
" "	4 and 5, Kent Street... ..	...	109·60	...	"
" "	81—88, Cuckoo Road ... ..	...	85·20	...	very large
" "	111—116, Cuckoo Road ... ..	...	72·60	...	"
" "	117—122, Cuckoo Road ... ..	...	79·20	...	"
" "	47, Grange Road ... ..	...	117·00	...	large
" "	89—96, Cuckoo Road (Diarrhoea) ...	...	61·60	...	very large
" 21st	8, Whitmore Road ... ..	...	69·40	...	...
" 22nd	140—145, Grange Road ... ..	...	124·60	...	very large
" "	18—23, Ladywood Road ... ..	...	136·60	...	large
" "	130, Coventry Road, and 29, Herbert Road ... ..	...	88·00	...	rather large
" "	58—61, Victoria Street ... ..	...	156·60	...	...
" "	Back 5, Oozells Street North ... ..	...	170·40	...	...

EXPRESSED IN PARTS PER 100,000.

Ammonia	Nitrogen, as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contam- ination. (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
·003	·363	·387	3300	1·9	10°·1	5°·8	15°·9	Clear
·002	·264	·324	2330	1·6	6°·4	5°·8	12°·2	Slightly turbid, yellow- ish
·003	·319	·369	2890	2·0	8°·2	5°·4	13°·6	Clear
·004	·209	·269	1800	1·7	5°·2	9°·0	14°·2	Slightly turbid, slightly greenish
·004	·264	·297	2350	1·8	6°·7	7°·0	13°·7	Bright
·002	·253	·273	2220	1·9	6°·3	6°·7	13°·0	Very slightly turbid
·004	·253	·276	2240	1·7	10°·1	6°·6	16°·7	Turbid
·003	·216	·245	1864	1·8	4°·6	7°·1	11°·7	Slightly turbid
·002	·264	·296	2330	1·9	6°·1	7°·1	13°·2	Clear
·002	·154	·204	1236	1·5	15°·4	7°·3	22°·7	Turbid, floating particles
·003	·418	·443	3880	1·7	6°·9	8°·7	15°·6	Slightly turbid
·003	·374	·422	3420	1·7	6°·8	7°·7	14°·5	Very slightly turbid, slightly yellowish green
·003	·279	·317	2470	1·7	7°·7	7°·0	14°·7	
·004	·236	·279	2070	1·77	8°·9	6°·7	15°·6	
·003	·217	·269	1870	1·78	9°·2	8°·2	17°·4	
·002	·261	·313	1690	1·65	7°·2	8°·3	15°·5	
·002	·230	·295	1990	1·71	6°·3	10°·2	16°·5	
·005	6·60	6·604	65720	12·0	...	...	...	Clear
·006	7·92	7·925	78930	13·1	...	...	...	Clear
·280	5·06	5·290	52580	10·2	...	...	...	Clear
·095	7·15	7·228	71960	15·0	...	...	...	Clear
·011	·33	·339	3070	23·9	...	...	...	Clear
·006	·88	·885	8530	7·5	...	...	...	Clear
6·050	1·54	6·889	68570	31·1	...	...	...	Slightly turbid
·005	6·82	6·824	67920	18·2	...	...	...	Clear
·004	4·29	4·223	42610	11·3	...	...	...	Clear
·003	6·93	6·932	69000	21·3	...	...	...	Clear
·003	11·66	11·662	116300	20·9	...	...	...	Clear
·002	2·64	2·641	26090	6·9	...	...	...	Clear
·004	·66	·663	6010	9·2	...	...	...	Turbid, slightly yellow
·460	4·73	5·109	5770	8·1	...	...	...	Clear
·005	3·96	3·964	39320	5·9	...	...	...	Clear
·200	7·81	8·798	87660	10·0	...	...	...	Clear
·011	2·31	2·319	22870	5·3	...	...	...
·018	2·20	2·215	21820	5·8	...	...	...	Clear
·005	5·17	5·174	51420	10·5	...	...	...	Clear
·013	5·61	5·62	55880	11·1	...	...	...	Clear
·004	2·86	2·863	28310	4·4	...	...	...	Clear
·003	5·72	5·722	56900	5·2	...	...	...	Clear
·004	2·09	2·093	20610	4·5	...	...	...	Clear
·002	3·08	3·081	30490	8·1	...	...	...	Clear
·005	1·32	1·324	12920	3·6	...	...	...	Clear
·280	3·30	3·53	34980	4·6	...	...	...	Clear
·012	3·19	3·20	31680	9·9	...	...	...	Clear
·017	7·26	7·274	72420	15·4	...	...	...	Clear, residue yellow
·003	2·86	2·862	28300	8·2	...	...	...	Clear
·530	8·58	9·015	89830	16·2	...	...	...	Clear
·610	·55	1·052	10200	49·5	...	...	...	Clear, residue brown

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1880.	WELL WATERS—(Continued).				
Jan. 26th	87 and 88, Spring Hill ... ..	...	136·00	...	...
" "	Back 91, Spring Hill... ..	...	215·00	...	...
" "	Hall and Mason's Buildings, Radnor Street ... ..	...	211·60	...	...
" "	Avon Place, Allen's Road ... ..	...	79·00	...	...
" "	21 and 22 Courts, Lee Bank Road ...	...	108·40	...	large
" "	177—179, Lee Bank Road, and 8 and 9, Elvetham Road... ..	...	127·60	...	moderate rather large
" 29th	1—5, Good Knave's End (Low Fever)	...	58·00	...	...
Feb. 3rd	123, Cuckoo Road ... ..	...	133·00	...	very large
" "	126—133, Cuckoo Road ... ..	...	102·60	..	...
" "	23—26, Church Road and 253—257, Mount Street ... ..	...	234·00	...	...
" "	1 Court, Vere Street ... ..	...	206·00	...	large
" "	Back 23, Austin Street ... ..	...	76·00	...	"
" "	314, Bristol Road ... ..	...	81·00	...	very large
" 6th	Ada Terrace and Lavinia Terrace, Osler Street ... ..	...	90·40	...	very large
" 9th	42—46, Norton Street ... ..	...	67·20	...	moderate
" "	57—63, Norton Street ... ..	...	59·60	...	"
" "	240—243, Farm Street ... ..	...	92·00	...	rather large
" "	18 Court, New John Street ... ..	...	55·80	...	large
" "	49 and 50, Bridge Street West ... ..	...	67·00	...	"
" "	22 and 23, Waterworks Road ... ..	...	79·00	...	moderate
" 12th	35—37, Inkerman Street, and Alhwa Crescent (at back)... ..	...	97·40	...	rather large
" "	51—53, Inkerman Street ... ..	...	148·60	...	very large
" "	127 and 128, Coventry Road .. ..	...	118·00	..	"
" "	435, Coventry Road ... ..	...	86·00	...	"
" "	Garibaldi Terrace, and 11, Hawkes Street (Scarlet Fever) ... ..	...	119·00	...	large
" "	35 and 36, Muntz Street (Diarrhoea)... ..	...	146·00	...	very large
" 19th	193—197, Saint Vincent Street ... ..	...	54·00	...	rather large
" "	2, Spring Hill, and 156, Icknield St... ..	...	208·60	...	large
" "	37 and 38, Spring Road (Diphtheria) ..	...	146·00	...	very large
" "	2 and 3, Norton Street ... ..	...	243·00	...	...
" "	Rachael Place, Winson Green Road ...	...	99·00	...	very large
" "	183, Dudley Road ... ..	...	123·00	...	..
" 23rd	1—9, New Terrace, Green Lane ... ..	...	148·00	...	very large
" "	10—15, New Terrace, Grange Road, (Scarlet Fever) ... ..	...	124·60	...	very large
" "	16—21, New Terrace, Grange Road ...	...	173·00	...	"
" "	64 and 65, Green Lane ... ..	...	149·00	...	"
" "	61—63, Green Lane ... ..	...	192·00	...	"
" "	Back 42, Lower Tower Street... ..	...	196·00	...	...
" 26th	25—27, Ravenhurst Street ... ..	...	149·00	...	...
" "	112—114, Wright Street ... ..	...	115·60	...	very large
" "	Holly Place, Wright Street (Diarrhoea) ...	...	110·00	...	"
" "	59—63, Camp Hill ... ..	...	106·00	...	rather large
" "	1—3, Back 321, Coventry Road (Scarlet Fever) ...	...	124·00	...	...

Continued.

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen	Previous Sewage or Animal Contam- nation. (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
·285	4·40	4·635	46030	25·7	..	...	...	Clear
·240	7·81	8·007	79750	20·0	...	...	...	Clear
·028	3·30	3·323	32910	11·4	...	...	...	Clear
2·100	1·21	2·932	29000	2·1	...	...	...	Slightly turbid
·004	3·08	3·083	30510	24·2	...	...	...	Clear
·003				31·5	...	...	...	Clear
·005	2·42	2·424	23920	4·6	...	...	...	Clear
·004	4·40	4·403	43710	6·7	...	...	...	Clear
·035	3·19	3·219	31870	6·9	...	...	...	Slightly turbid
·055	13·75	13·796	137630	25·8	...	...	...	Clear, residue brown Clear
·003	4·73	4·732	47000	23·3	...	...	...
·004	2·31	2·312	22810	5·0	...	...	...
·003	1·31	1·312	11800	3·3	...	...	...
·003	·88	·882	8500	15·4	...	...	...	Clear
·003	2·09	2·092	20600	9·4	...	...	...	Clear
·002	2·31	2·311	22790	6·1	...	...	...	Clear
·004	3·30	3·303	32710	10·1	...	...	...	Clear
·006	2·09	2·095	20630	5·3	...	...	...	Clear
·007	2·20	2·205	21730	6·1	...	...	...	Clear
·008	3·63	3·636	36040	4·4	...	...	...	Clear
·008	2·86	2·866	28340	8·0	...	...	...	Clear
·003	7·46	7·462	74300	13·1	...	...	...	Clear
·006	6·05	6·055	60230	8·7	...	...	...	Clear
·004	2·20	2·203	21710	6·1	...	...	...	Slightly turbid
·005	3·96	3·964	39320	10·4	...	...	...	Clear
·006	4·18	4·185	41530	15·5	...	...	...	Clear
·007	4·18	4·185	41530	7·9	...	...	...	Clear
·005	7·92	7·924	78920	44·9	...	...	...	Clear
·004	3·84	3·843	38110	5·9	...	...	...	Clear
1·200	15·51	16·498	164660	29·8	...	...	...	Slightly turbid
·015	5·72	5·732	57000	13·4	...	...	...	Clear
·370	6·05	6·355	63230	18·8	...	...	...	Clear
·010	6·60	6·608	65760	10·5	...	...	...	Slightly turbid
·004	3·52	3·523	34910	5·8	...	...	...	Slightly turbid
·006	6·82	6·825	67930	13·0	...	...	...	Slightly turbid
·005	5·61	5·614	55820	12·3	...	...	...	Bright, with a few sus- pended particles
·004	8·25	8·253	82210	18·5	...	...	...	Clear
·230	10·45	10·639	106070	26·6	...	...	...	Clear
·490	5·50	5·904	58720	15·4	...	...	...	Clear
·006	5·61	5·615	55830	14·5	...	...	...	Clear
·007	5·28	5·286	52540	10·6	...	...	...	Clear
·003	2·09	2·092	20600	11·3	...	...	...	Clear
·013	3·96	3·970	39380	6·8	...	...	...	Muddy, brown

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1880.	WELL WATERS—(continued).				
Feb. 26th	321 and 322, Coventry Road ...	...	184.00	...	very lar
" 28th	Mr. Stile's Garden, Good Knave's End ...	...	82.00	...	...
" "	3 Court, Kyrwick's Lane (Scarlet Fever) ...	...	211.00	...	very lar
" "	46 and 48, Gough Road ...	...	131.00	...	"
Mar. 3rd	49, Highgate Lane ...	...	154.00	...	"
" "	50 and 51, Highgate Lane ...	...	159.00	...	"
" "	60 and 61, Highgate Lane (Typhoid) ...	...	98.00	...	"
" 9th	21 and 22, Main Street ...	...	99.00	...	large
" "	25 and 26, Main Street (Typhoid) ...	...	135.00	...	"
" "	46, Larches Street ...	...	66.00	...	very lar
" "	1—5, Marshall St. South (Diarrhoea) ...	...	100.00	...	"
" 17th	1—5 Good Knave's End (Low Fever) ...	...	58.00	...	"
" "	Summer Terrace, Summer Row ...	...	111.00	...	large
" "	Back 135, Wheeler Street (Typhoid) ...	...	157.00	...	excess
" "	84—87, Well Street ...	...	128.00	...	very lar
" "	88 and 89, Well Street ...	...	133.00	...	...
" "	164—166, Great Colmore Street, and 190—193, Lee Bank Road ...	...	151.00	...	very lar
" 27th	15 Court, Bordesley Park Road ...	...	96.00	...	...
" "	476—478, Coventry Road ...	...	108.00	...	very lar
" "	80—84, Muntz Street ...	...	79.00	...	excess
" "	85, Muntz St., and 117, Grange Road ...	...	122.00	...	very lar
" "	115 and 116, Bromsgrove Street ...	...	156.00	...	"
" "	12et., Gooch St., and 11et., Benacre St. ...	...	166.00	...	...
Apr. 5th	329 and 330, Pershore Road... ...	...	126.00	...	large
" "	314, Bristol Road ...	...	88.00	...	very lar
" "	22 and 23, Ledsam Street, and 88 and 89, Sherborne Street ...	...	155.00	...	"
" "	11 Court, Fleet Street ...	...	254.00	...	...
" 6th	15 Court, Geach Street ...	...	68.00	...	very lar
" "	109—113, Lancaster Street (Diarrhoea) ...	...	218.00	...	"
" 12th	Back 29, Friston Street ...	...	142.00	...	large
" "	15 and 16, Wright Street ...	...	110.00	...	very lar
" "	17 and 18, Wright Street ...	...	121.00	...	...
" "	Laburnum Terrace, and 74 and 75, Hawkes Street ...	...	136.00	...	large
" "	60—62, Hawkes Street ...	...	122.00	...	very lar
" "	77—82, Great Tindal Street. . .	...	102.00	...	moder
" 15th	4 Court, Kyrwick's Lane ...	...	174.00	...	large
" "	5 Court, Kyrwick's Lane ...	...	182.00	...	very lar
" "	6 and 7, Bordesley Green Road ...	...	84.00	...	"
" "	11, Wordsworth Road ...	...	164.00	...	"
" "	84—88, Montgomery Street, and 1—4, White Road ...	...	64.00	...	"
" 22nd	1 Court, Barrack Street ...	...	218.00	...	large
" "	9 and 10, Barrack Street ...	...	180.00	...	"
" "	Back Winson Green Place, Bachelms Rd ...	...	72.00	...	very lar
" "	First Row, Talbot Street ...	...	94.00	...	...
" "	Second Row, Talbot Street ...	...	86.00	...	...
" "	208—210, Park Road ...	...	25.00	...	large

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contam- ination. (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
·008	7·26	7·266	72340	21·2	...	...	...	Clear
·028	2·42	2·443	24110	4·7	...	...	...	Slightly turbid
·005	5·39	5·394	53620	21·1	...	...	...	Clear
·007	4·07	4·075	40430	10·8	...	...	...	Clear
·014	4·40	4·411	43790	13·1	...	...	...	Clear
·018	3·52	3·535	35030	13·3	...	...	...	Clear
·006	1·98	1·985	19530	7·4	...	...	...	Clear
·004	3·19	3·193	31610	7·5	...	...	...	Clear
·005	5·28	5·284	52520	10·2	...	...	...	Clear
·004	1·98	1·983	19510	5·2	...	...	...	Clear
·007	3·30	3·305	32730	7·9	...	...	...	Clear
·005	2·42	2·424	23920	4·6	...	...	...	Slightly turbid, with suspended particles
·006	5·50	5·505	54730	9·6	...	...	...	Clear
·009	6·49	6·497	64650	8·1	...	...	...	Slightly turbid, slightly greenish
·005	5·28	5·284	52520	18·1	...	...	...	Bright
·090	6·60	6·674	66420	20·5	...	...	...	Turbid
·004	4·29	4·293	42610	22·2	...	...	...	Clear
·650	4·64	5·216	51840	8·2	...	...	...	Slightly turbid
·009	3·19	3·197	31650	13·4	...	...	...	Clear
·006	1·54	1·545	15120	5·1	...	...	...	Clear
·010	2·20	2·208	21760	7·4	...	...	...	Slightly turbid
·007	7·15	7·156	71240	17·6	...	...	...	Clear
2·800	1·65	3·950	39180	24·4	...	...	...	Clear
·005	3·08	3·084	30520	10·9	...	...	...	Clear
·005	·99	·994	9620	3·8	...	...	...	Clear
·009	3·19	3·197	31650	38·5	...	...	...	Slightly turbid, with large suspended parti- cles, apparently of rotten wood
·520	8·80	9·228	91960	46·3	...	...	...	Slightly turbid
·004	2·09	2·093	20610	7·9	...	...	...	Clear
·006	6·05	6·055	60230	33·1	...	...	...	Clear
·005	9·13	9·134	91020	17·2	...	...	...	Clear
·006	4·29	4·295	42630	9·1	...	...	...	Turbid
·285	5·94	6·175	61430	10·9	...	...	...	Clear
·005	6·93	6·934	69020	13·3	...	...	...	Clear
·007	4·95	4·956	49240	10·2	...	...	...	Turbid
·006	4·18	4·185	41530	10·4	...	...	...	Clear
·005	3·52	3·524	34920	24·2	...	...	...	Clear
·002	3·63	3·631	35990	22·5	...	...	...	Clear
·004	1·87	1·873	18410	5·1	...	...	...	Clear
·011	6·60	6·609	65770	9·0	...	...	...	Slightly turbid
·004	1·43	1·433	14010	4·3	...	...	...	Clear
·001	11·66	11·661	116290	19·5	...	...	...	Clear
·003	9·02	9·022	89900	18·7	...	...	...	Clear
·003	3·30	3·302	32700	4·7	...	...	...	Clear
·085	3·74	3·810	37780	9·2	...	...	...	Slightly turbid
·210	1·43	1·599	15670	13·5	...	...	...	Clear
·005	·44	·444	4110	3·8	...	...	...	Turbid, large suspended particles

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1880.	WELL WATERS.—(continued).				
Apr. 22nd	Winson Green Place, Bacchus Road...	...	72·00	...	very lar
" 26th	6 Court, Kyrwick's Lane ...	...	131·00	...	"
" "	25—30, Factory Road ...	...	152·00	...	...
" "	53 and 54, Highgate Lane, and 17, Turner Street ...	...	103·00	...	large
" "	56 and 57, Highgate Lane ...	...	124·00	...	"
" "	58 and 59, Highgate Lane ...	...	94·00	...	...
May 6th	31 & 32, Balsall Heath Rd. (Diphtheria)	...	148·00	...	large
" "	16—18, The Pleek, Park Road ..	...	62·00	...	very lar
" "	19 and 20, The Pleek, Park Road ...	...	64·00	...	"
" "	28, The Pleek, Park Road ...	...	79·00	...	"
" "	29, The Pleek, Park Road ...	...	114·00	...	"
" 13th	100, Suffolk Street ...	...	154·00	...	"
" "	58 and 60, Summer Road ...	...	134·00	...	...
" "	180—188, Conybere Street ...	...	179·00	...	very lar
" "	15 Court, Geach Street ...	...	74·00	...	large
" "	29 and 30, Lower Pershore Street ...	...	168·00	...	...
" "	6 and 8, William Edward Street ...	...	238·00	...	...
" 20th	151a, Sherlock Street, and 383, Pershore Road ...	...	176·00	...	...
" "	151e and 151d, Sherlock Street ...	...	75·00	..	...
" "	211 and 212, New John Street West, and 118 and 119, Hockley Hill ...	...	110·00	..	very lar
" "	96—100, Summer Lane ...	...	156·00	...	large
" "	75 and 76, Ford Street ...	...	188·00	...	...
" "	10 Court, Ormond Street ...	...	162·00	...	large
" 24th	3 and 4, Dolobran Road (Diphtheria)	...	52·00	...	modera
" "	Adams' Premises, Montgomery Street ...	...	88·00	..	...
" "	Back of 70—75, Henley Street ...	...	99·00	...	...
" "	2—5, Main Street ...	...	102·00	...	modera
" "	40—45, Montpellier Street ...	...	180·00	...	very lar
" "	143 and 144, Sampson Road... ..	...	106·00	...	large
" 27th	22—27, Stratford Street ...	...	108·00	...	...
" "	Western Place, Stratford Street (Scarlet Fever)	...	106·00	...	very lar
" "	167—170, Camp Hill (Scarlet Fever)	...	125·00	...	large
" "	2 and 4, Braithwaite Road ...	...	145·00	...	...
" "	29 and 31, Braithwaite Road ...	...	105·00	...	very lar
" "	168 and 169, Bradford Street ...	...	203·00	...	"
June 1st	Powell's Premises, Kyrwick's Lane ...	...	122·00	...	modera
" "	191—193, Cattell Road ...	...	136·00	...	very lar
" "	14, Whitmore Road ...	...	109·00	...	large
" "	23 and 24, Whitmore Road ...	...	98·00	...	"
" "	Chesnut House, Whitmore Road ...	...	139·00	...	"
" "	167—169, High St., Deritend (Whooping Cough)	...	330·00	...	very lar
" 8th	Messrs. Barker Bros., Paradise Street ...	...	146·60	...	modera
" "	7—9, The Pleek, Park Road... ..	...	106·00	...	...
" "	Houses occupied by Barnsley and Lee, The Pleek, Park Road ...	...	125·00	...	...
" "	14 and 15, The Pleek, Park Road ...	...	82·00	...	...
" "	21—24, The Pleek, Park Road ...	...	50·00	...	very lar

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites	Total combined Nitrogen.	Previous Sewage or Animal Contam- ination (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
·003	3·30	3·302	32700	4·7	...	...	...	Clear
·006	2·86	2·865	28330	12·9	...	...	...	Clear
·550	9·68	10·133	101010	16·4	...	...	..	Clear
·002	3·08	3·081	30490	10·5	...	...	...	Clear
·004	3·74	3·743	37110	10·3	...	...	...	Clear
·280	1·87	2·101	20790	7·6	...	...	...	Clear
1·400	2·64	3·785	37530	14·7	...	...	...	Clear
·004	1·65	1·653	16210	5·2	...	...	...	Turbid
·005	1·43	1·434	14020	4·2	...	...	...	Clear
·035	·22	·249	2170	5·3	...	...	...	Slightly turbid, dirty brown
·009	1·98	1·987	19520	6·5	...	...	...	Bright
·009	5·94	5·947	59150	24·8	...	...	...	Clear
·600	4·95	5·444	54120	10·4	...	...	...	Clear
·004	1·54	1·543	15110	15·8	...	...	...	Clear
·005	2·20	2·204	21720	8·3	...	...	...	Clear
5·000	2·53	6·645	66130	17·8	...	...	...	Clear
1·050	2·42	3·287	32550	23·5	...	...	...	Clear
·048	5·61	5·649	56170	16·1	...	...	...	Clear
·018	·0	·0	0	9·5	...	...	...	Clear, yellowish
·003	5·83	5·832	58000	11·1	...	...	...	Clear
·005	6·93	6·934	69020	22·8	...	...	...	Clear
3·250	8·25	10·925	108930	30·5	...	...	...	Clear
·007	4·62	4·626	45940	18·3	...	...	...	Clear
·008	1·65	1·657	16250	3·4	...	...	...	Clear
·032	·88	·906	8740	13·4	...	...	...	Clear
·240	2·20	2·397	23650	5·3	...	...	...	Clear
·004	3·96	3·963	39310	8·8	...	...	...	Clear
·003	4·40	4·402	43700	21·0	...	...	...	Clear
·003	3·19	3·192	31600	4·9	...	...	...	Clear
1·650	5·06	6·418	63860	10·1	...	...	...	Clear
·007	3·85	3·856	38240	8·2	...	...	...	Clear
·004	4·18	4·183	41510	13·3	...	...	...	Clear
·310	2·20	2·455	24230	17·5	...	...	...	Clear
·004	·99	·993	9610	5·3	...	...	...	Clear
·005	7·48	7·484	74520	14·0	...	...	...	Clear
·003	4·40	4·402	43700	13·7	...	...	...	Clear
·005	6·60	6·604	65720	16·5	...	...	...	Clear
·004	3·30	3·303	32710	9·3	...	...	...	Clear
·003	1·43	1·432	14000	5·1	...	...	...	Clear
·004	4·95	4·953	49210	12·9	...	...	...	Clear
·005	13·75	13·754	137220	60·5	...	...	...	Clear
·005	4·84	4·844	48120	16·5	...	...	...	Clear
·480	4·40	4·795	47630	7·5	...	...	...	Clear
·240	5·83	6·027	59950	9·5	...	...	...	Clear
·210	·66	·833	8010	11·0	...	...	...	Clear
·005	·33	·334	3020	2·0	...	...	...	Clear

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1880.	WELL WATERS.—(continued.)				
June 8th	25—27, The Pleck, Park Road ...	...	53·00	...	very large
" 15th	1 and 2, Oak Villas, Hobmore Lane...	...	70·00	...	rather large
" "	3 and 4, Oak Villas, Hobmore Lane...	...	52·00	...	very large
" "	5 and 6, Oak Villas, Hobmore Lane...	...	47·00	...	large
" "	7 and 8, Oak Villas, Hobmore Lane...	...	66·00	...	"
" 16th	238 and 239, Farm Street ...	...	90·00	...	moderate
" 18th	14 Court, Bordesley Park Road (Diphtheria)	...	90·00	...	large
" "	410 and 411, Nechells Park Road (Scarlet Fever)	...	102·00	...	"
" "	222, Coventry Road ...	...	67·00	...	"
" "	354, Coventry Road ...	...	21·00	...	"
" "	355 and 356, Coventry Road...	...	76·00	...	"
" "	358—360, Long Acre (Small-pox) ...	...	172·00	...	...
" 28th	40, Montague Street ...	...	196·00	...	...
" "	6 Court, Lower Trinity Street ...	...	201·00	...	...
" "	85—88, Bacchus Road ...	...	111·00	...	...
" "	174—177, Handsworth New Road ...	...	128·00	...	...
" "	357 and 358, Park Road ...	...	76·00	...	large
" "	Winson Terrace, Winson Green ...	...	82·00	...	"
" "	Back 2 and 3, Main Terrace, Kyrwick's Lane ...	...	180·00	...	"
" "	Back 5 and 6, Main Terrace Kyrwick's Lane ...	...	204·00	...	rather small
" "	14 and 15, Lee Bank Road ...	...	111·00	...	moderate
" "	92, Wellington Road (Scarlet Fever)...	...	116·00	...	rather small
" "	27 and 28, Pershore Rd. (Scarlet Fever)	...	100·00	...	very large
" "	58 and 60, Summer Road ...	...	136·00	...	...
July 1st	13 and 14, Spring road ...	...	130·00	...	large
" "	16—19, South Road ...	...	82·00	...	...
" "	20—23, South Road ...	...	85·00	...	...
" "	60—64, White Road (Diphtheria) ...	...	48·00	...	...
" "	70—75, Henley Street ...	...	108·00	...	...
" "	122—124, Hockley Hill, and 1—4, Guest Street ...	...	98·00	...	...
" 3rd	7 Court, Holloway Head ...	...	144·00	...	moderate
" "	86 and 88, Gough Road (Diphtheria)	...	60·00	...	"
" 5th	108 and 109, Winson Street...	...	81·00	...	...
" "	127 and 128, Winson Street...	...	108·00	...	...
" "	54, Spring Hill ...	...	192·00	...	...
" "	326, Pershore Road ...	...	86·00	...	...
" 7th	61 and 62, Harding Street (Fever) ...	...	182·00	...	rather large
" "	33 Court, Newtown Row (Measles) ...	...	170·00	...	...
" "	71 and 72, Well Street ...	...	86·00	...	...
" "	206 and 207, Well Street (Scarlet Fever)	...	144·00	...	...
" 8th	House occupied by Mr Suet, Well Lane	...	340·00	...	...
" "	Drayton Terrace, Camp Hill, (Diphtheria)	...	108·00	...	moderate
" 12th	82½ and 83, Hatchet Street (Scarlet Fever)	...	196·00	...	large
" "	2, Phillip Street (Whooping Cough)...	...	120·00	...	very large
" "	105 and 107, Golden Hillock Road ...	...	126·00	...	...
" "	101, Coventry Road ...	...	76·00	...	...
" "	197 and 198, Cooksey Road (Whooping Cough)	...	82·00	...	moderate

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contam- ination (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempo- rary.	Perman- ent.	Total.	
·004	·22	·223	1910	2·2	...	...	...	Clear
·004	1·10	1·103	10710	5·1	...	..	...	Clear
·016	·44	·453	4210	3·2	...	...	...	Clear
·002	·22	·221	1890	3·0	...	...	...	Turbid, with very many large suspended particles
·003	·22	·222	1900	2·6	...	...	...	Turbid, slightly greenish
·004	2·53	2·533	25010	11·3	...	...	...	Clear
·002	3·08	3·081	30490	4·3	...	...	...	Clear
·010	2·64	2·648	26160	8·5	...	...	...	Clear
·003	1·98	1·982	19500	4·0	...	...	...	Clear
·004				1·3	...	...	...	Clear
·008	3·08	3·086	30540	4·0	...	...	...	Clear
·280	10·23	10·460	104280	13·6	...	...	...	Clear
·009	7·70	7·707	76750	15·4	...	...	...	Contained a great quantity of large suspended particles
·004	4·18	4·183	41510	18·5	...	..	...	Clear
·040	5·94	5·973	59410	8·0	...	...	...	Clear
·720	7·81	8·403	83710	11·8	...	...	...	Clear
·004	2·31	2·313	22810	5·8	...	...	...	Clear
·015	3·74	3·752	37200	7·2	...	.	...	Clear
·002	4·95	4·951	49190	18·6	...	...	...	Clear
·003	3·85	3·852	38200	32·6	..	...	...	Clear
·007	2·97	2·975	29430	21·9	...	...	...	Clear
·002	3·19	3·191	31590	5·8	...	...	...	Clear
·003	4·73	4·732	47000	7·5	...	...	..	Clear
·580	5·94	6·418	63860	9·6	...	...	...	Clear
·003	4·39	4·392	43600	9·9	...	...	...	Clear
·120	3·30	3·399	33670	5·5	...	...	...	Clear
·220	3·63	3·811	37790	6·3	...	...	...	Clear
·004	·66	·663	6310	3·0	...	...	...	Clear
·050	3·08	3·121	30990	5·3	...	...	...	Clear
·004	4·40	4·403	43710	10·3	...	...	...	Clear
·003	8·25	8·252	82220	24·1	...	...	...	Clear
·002	1·98	1·981	19490	5·5	..	...	...	Clear
1·850	3·96	5·483	54510	8·7	...	...	...	Clear
·140	6·16	6·275	62430	12·3	...	...	...	Clear
·080	3·30	3·966	39340	55·7	...	...	...	Clear
·013	1·76	1·771	17390	8·5	...	...	...	Clear
·004	5·06	5·063	50310	23·1	...	...	...	Clear
·420	5·94	6·286	62540	16·0	...	...	...	Clear
·160	2·86	2·991	29590	14·4	...	...	...	Clear
·500	7·92	8·330	82980	16·5	...	...	...	Clear
·075	9·90	9·962	99323	63·8	...	...	...	Clear
·002	3·63	3·631	35990	8·1	...	...	...	Clear
·005	9·90	9·904	98720	22·5	...	...	...	Clear
·003	3·84	3·842	38100	17·4	...	...	...	Clear
·400	8·03	8·360	83280	10·3	...	...	...	Clear
·016	2·64	2·653	26210	5·4	...	...	...	Turbid
·004	2·75	2·753	27210	6·2	...	...	...	Clear

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1880.	WELL WATERS.—(continued.)				
July 12th	201 and 202, Cooksey Road (Scarlet Fever) ...	...	58·00	...	large
" 19th	35 Court, Brearley Street ...	...	264·00	...	...
" "	41—45, Icknield Street ...	...	102·00	...	...
" "	3 Court, Mole Street ...	...	154·00	...	very large
" "	20, Mole Street ...	...	181·00	...	"
" "	72 and 73, Mole Street ...	...	110·00	...	"
" "	74 and 75, Mole Street ...	...	156·00	...	"
" 27th	337 and 338, Pershore Road... ..	...	42·60	...	"
" "	70—75, Henley Street ...	...	110·80	...	...
" "	108 and 109, Winson Street... ..	...	96·20	...	...
Aug. 10th	Foster's Premises, Marshall Street South, and Turner Street (Typhoid) ...	...	84·60	...	very large
" "	46 and 47, Marshall Street South ...	...	124·60	...	...
" "	3 Court, Tennant Street, and back of 63, St. Martin Street (Diphtheria) ...	...	95·80	...	moderate
" "	55 and 56, Lancaster Street ...	...	65·40	...	large
" "	3 & 4 Courts, Lionel Street (Diphtheria) ...	...	269·60	...	...
" "	Winson Terrace, Winson Street ...	...	89·60	...	large
" 16th	84—87, Well Street ...	...	116·60	...	"
" "	88 and 89, Well Street ...	...	123·40	...	"
" 24th	223, Coventry Road ...	...	65·80	...	"
" 30th	122—124, Hockley Hill, and 1—4, Guest Street ...	...	105·80	...	"
Sep. 3rd	20—24, Winson Street ...	...	112·40	...	...
" "	1 & 2, Mona Terrace, Langley Road... ..	...	79·60	...	...
" 8th	111 & 112, Little Green Lane (Typhoid) ...	...	59·20	...	large
" "	115 and 116, Little Green Lane ...	...	50·60	...	"
" "	Back 79 and 80, White Road ...	...	76·20	...	very large
" "	39—42, Muntz Street ...	...	124·40	...	moderate
" "	2 and 3, Spring Road... ..	...	115·60	...	...
" "	49—53, Bluecher Street ...	...	145·60	...	large
" 16th	Gosford Terrace, Walter St. (Typhoid) ..	...	88·00	...	very large
" "	118 & 119, Neehells Park Road ...	...	115·40	...	"
" "	3 and 4, Farm Road ...	...	91·40	...	...
" "	5 and 6, Farm Road ...	...	83·60	...	moderate
" "	25—27, Highgate Lane ...	...	151·60	...	large
" "	145—147, Larches Street ...	...	158·60	...	"
" 23rd	11 Court, Adelaide Street, Deritend (Diarrhœa) ...	...	234·80	...	very large
" "	99—101, Cheapside ...	...	265·40	...	"
" "	1—7, All Saints' Street ...	...	113·40	...	...
" "	201—203, Lodge Road ...	...	77·60	...	...
" "	Oak Tree Place, Harding Street, All Saints' (Diphtheria) ...	...	149·60	...	...
" "	Clifton Terrace, Kent Street North (Diarrhœa) ...	...	40·60	...	large
" 28th	30—33, Marshall Street South, and 26—28, Turner Street ...	...	104·80	...	...
" "	42, Ladypool Lane ...	...	83·40	...	rather large
" "	37—42, Larches Street (Diarrhœa) ...	...	90·40	...	...

Continued.

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contam- ination. (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
·005	1·10	1·104	10720	3·3	...	...	...	Clear
·035	13·75	13·779	137470	32·3	...	..	...	Clear
·024	3·42	3·440	34080	5·9	...	...	...	Clear
·003	6·05	6·052	60200	11·2	...	...	...	Clear
·015	6·49	6·492	64600	20·7	...	...	...	Clear
·010	2·86	2·868	28360	7·8	...	...	...
·006	5·50	5·505	54730	10·5	...	...	...
·003	·88	·882	8500	9·5	...	...	...	Clear
·017	4·29	4·304	42720	5·9	...	...	...	Clear
1·600	3·30	4·617	45850	9·8	...	...	...	Clear
·004	1·65	1·653	16210	4·7	...	...	...	Clear
·040	2·31	2·343	23110	6·6	..	...	...	Clear
·003	4·84	4·842	48100	10·0	...	...	...	Clear
·002	1·43	1·431	13990	11·9	...	...	...	Clear
1·200	9·13	10·118	100860	26·1	...	...	...	Clear
·006	3·85	3·855	38230	7·8	...	...	...	Clear
·005	4·73	4·734	47020	16·9	...	...	...	Clear
·017	5·83	5·844	58120	19·7	...	...	...	Clear
·004	1·98	1·983	19510	5·7	...	...	...	Clear
·005	4·07	4·074	40420	10·8	...	...	...	Clear
4·800	3·41	7·400	73680	14·1	...	...	...	Turbid
·060	3·08	3·129	30970	6·7	...	...	...	Turbid
·006	2·31	2·315	22830	3·9	...	...	...	Clear
·002	·77	·771	7390	2·4	...	...	...	Clear
·003	3·08	3·082	30500	5·2	...	...	...	Clear
·004	4·73	4·733	47010	12·5	...	...	...	Clear
·330	1·65	1·922	18900	10·2	...	...	..	Clear
·007	6·38	6·386	63540	23·3	...	...	...	Clear
·007	1·98	1·985	19520	4·9	...	...	...	Slightly Turbid
·006	5·72	5·725	56930	9·6	...	...	...	Clear
·110	1·32	1·411	13790	9·4	...	...	...	Clear
·008	5·06	5·067	50350	6·8	...	...	...	Clear
·007	4·40	4·406	43740	13·7	...	...	...	Clear
·004	3·63	3·633	36010	10·0	...	...	...	Clear
·005	7·48	7·484	74520	24·9	...	...	...	Clear
·005	8·80	8·804	87720	28·5	...	...	...	Clear
·085	3·74	3·810	37780	13·1	...	...	...	Clear
·110	1·54	1·631	15990	6·9	...	...	...	Slightly turbid, many suspended particles
1·200	8·80	9·788	97560	12·0	...	...	...	Clear
·004	trace	—	none	2·1	...	...	...	Turbid
·250	·66	·866	8340	9·0	...	...	...	Clear
·001	1·32	1·321	12890	6·2	...	...	...	Clear
·410	3·30	3·638	36060	6·8	...	...	...	Clear

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1880.	WELL WATERS—(continued).				
Sept. 29th	45 & 46, Ormond St. (Scarlet Fever)	...	147·60	..	...
" "	105 & 106, Kyrwiek's Lane ...	...	109·60	...	moderate
" "	31 Court, Newtown Row ...	...	186·60	...	...
" "	90—93, Wheeler Street (Typhoid) ...	...	33·80	...	...
Oct. 4th	Bull's Head, Great Queen Street .....	...	298·80	...	very large
" "	237, Farm Street (Diarrhœa) .....	..	143·40	...	...
" "	1—6, Bordesley Green Terrace, Bordesley Green (Scarlet Fever) .....	...	167·40	...	large
" "	40—42, Bordesley Green (Diarrhœa) ...	...	119·60	...	...
" "	94—97, Bordesley Green (Diarrhœa) ..	..	140·60	...	very large
" "	106—110, Bordesley Green (Diarrhœa) ...	...	117·60	...	large
" 7th	34 and 35, Pershore Road (Diarrhœa) ...	...	84·80	...	...
" "	37 and 38, Lee Crescent (Diarrhœa) . .	...	48·40	..	...
" "	152 & 153, Lee Bank Road (Diarrhœa) ...	...	158·40	...	very large
" 8th	1 Court, Liverpool Street .....	...	155·60	...	"
" "	51 and 52, Long Street .....	...	103·60	...	excessiv
" "	33—35, Erasmus Road .....	...	97·60	...	very large
" 15th	13, 14, & 15, Upper Highgate Street ...	...	294·80	...	"
" "	Somer's Buildings, Cape Street.....	..	66·40	...	large
" "	17 and 18, Saint James' Street.....	...	191·40	...	...
" "	9, 10, and 11, Summer Row .....	...	209·60	...	...
" "	Reservoir Terrace, Heath St. (Diarrhœa) ...	...	64·60	...	large
" "	299 and 300, Heath Street .....	...	91·60	..	...
" 21st	6 Court, Lionel Street .....	...	194·80	...	...
" "	198 and 199, Monument Road .....	...	96·80	...	...
" "	27—31, Crabtree Road ...	...	35·40	...	rather large
" "	3 Court, Clissold Street (Diarrhœa) ...	...	57·60	...	modera
" "	Doogood's Buildings, Mount Street (Typhoid) .....	...	83·60	...	very lar
" "	166 and 167, Iekmield Street.....	..	321·60	...	"
" 25th	31 and 32, Ryland Road .....	...	96·80	...	large
" "	73—78, Newtown Row.....	...	147·40	...	"
" "	4—6, Weston Street (Diarrhœa) ...	...	181·40	...	...
" "	Prospect Place, Long Aere (^{Scarlet} Fever).....	...	146·60	...	very lar
" "	43—45, Bloomsbury Street .....	...	171·60	...	"
" 27th	136—138, Varna Road.....	...	161·60	...	...
" 28th	26 & 27, Saint Luke's Road (Diphtheria) ...	...	196·80	...	large
" "	29—31, Saint Luke's Road (Diphtheria) ...	...	164·40	...	very lar
" "	13 Court, Brearley Street West.....	...	79·60	...	"
" 29th	46 and 47, Ladywood Road, and 19 and 20, Glebe Street, (^{Scarlet} Fever) .....	...	87·40	...	large
" "	179 and 181, Saint Vincent Street (Diarrhœa) .....	...	53·60	...	moderat
" "	Back 2, Bull Ring (Diarrhœa) ..	...	173·60	...	very lar
Nov. 2nd	4 Court, Emily Street .....	...	221·80	...	large
" "	125, Coventry Road .....	...	112·40	...	"
" "	415—417, Coventry Road and 194 and 195, Cattell Road (Diarrhœa) ...	...	232·40	...	very lar
" "	67 and 68, Cheapside .....	...	214·60	...	"

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contam- ination. (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
·020	2·64	2·656	26240	20·3	...	...	...	Clear
·001	4·07	4·071	40390	8·9	...	...	...	Clear
1·250	4·95	5·979	59470	22·4	...	...	...	Clear
·090	·66	·718	6860	5·5	...	...	...	Clear
·005	9·02	9·026	89940	38·5	...	...	...	Slightly turbid
1·200	3·08	4·068	40360	26·2	...	...	...	Clear
·004	4·29	4·293	42610	13·9	...	...	...	Clear
·040	6·27	6·303	62710	7·5	...	...	...	Clear
·003	4·07	4·072	40400	14·8	...	...	...	Clear
·001	3·19	3·191	31590	8·1	...	...	...	Clear
·150	2·53	2·653	26210	6·8	...	...	...	Turbid
·420	·55	·896	8640	4·6	...	...	...	Clear
·009	7·70	7·707	76750	14·5	...	...	...	Clear
·002	6·16	6·161	61290	16·8	...	...	...	Clear
·003	1·43	1·432	14000	7·2	...	...	...	Very turbid, blackish
·004	4·18	4·183	41510	8·1	...	...	...	Bright
·004	1·98	1·983	19510	19·5	...	...	...	Clear
·003	3·08	3·082	30500	5·1	...	...	...	Clear
·040	10·12	10·153	101210	18·3	...	...	...	Slightly turbid, yellowish
·250	3·19	3·396	33640	52·5	...	...	...	Slightly turbid
·023	2·20	2·219	21870	6·1	...	...	...	Clear
·350	3·74	4·028	39960	9·7	...	...	...	Clear
·160	3·30	3·432	34000	45·6	...	...	...	Clear
·060	4·84	4·889	48570	10·2	...	...	...	Clear
·005	·77	·774	7420	3·9	...	...	...	Clear
·004	1·98	1·983	19510	7·1	...	...	...	Clear
·004	3·19	3·193	31610	6·0	...	...	...	Clear
·003	20·90	20·902	208700	40·5	...	...	...	Clear
·004	5·28	5·283	52510	6·8	...	...	...	Clear
·001	7·04	7·041	70090	19·4	...	...	...	Clear
·035	5·06	5·089	50570	10·6	...	...	...	Clear
·006	10·12	10·125	100930	15·1	...	...	...	Clear
·007	9·90	9·906	98740	16·0	...	...	...	Clear
·155	3·21	3·305	32730	12·1	...	...	...	Bright, contains many floating particles
·005	6·60	6·604	65720	24·7	..	...	...	Clear
·003	3·52	3·522	34900	19·1	...	...	...	Clear, brownish
·009	3·30	3·307	32750	10·9	...	...	...	Clear
·017	2·75	2·767	27350	10·5	...	..	...	Clear
·003	2·20	2·202	21700	6·0	...	...	...	Clear
·004	5·50	5·503	54710	27·0	...	...	...	Clear
·004	4·95	4·953	49210	17·8	...	...	...	Clear
·005	4·62	4·624	45920	8·2	...	...	...	Clear
·004	9·68	9·683	96510	20·9	...	...	...	Clear
·003	9·46	9·462	94300	24·7	...	...	...	Clear

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen
1880,	WELL WATERS—(continued).				
Nov. 2nd	1 & 3, Mountford's Buildings, Wright Street .....	...	151·60	...	...
" "	107, Wright Street .....	...	185·60	...	...
" 5th	15 & 16, Duddleston Row (Scarlet Fever) .....	...	150·80	...	...
" "	114 and 115, Dollman Street .....	...	172·40	...	...
" "	1 Court, Sandy Lane.....	...	150·40	...	...
" "	27, Cathcart Street.....	...	162·60	...	moderate
" "	58, Inkerman Street .....	...	133·60	...	very large
" "	215 and 216, Cheapside .....	...	324·60	...	...
" 11th	Back 87, Wright Street (Diarrhoea) ...	...	98·80	...	large
" "	146—149, Muntz Street (Diarrhoea)...	...	145·40	...	very large
" "	150—153, Muntz Street (Diarrhoea)...	...	115·40	...	"
" "	Hiron's Premises, Oakley Rd. (Diphtheria) ...	...	55·60	...	rather large
" "	22—27, Meriden Street.....	...	132·60	...	...
" "	9 Court, Coventry Street (Typhoid)...	...	161·60	...	...
" 17th	22 Court, Sherlock Street .....	...	210·80	...	...
" "	33 and 34 Courts, Hope Street.....	...	138·40	...	very large
" "	60 and 62, Gough Road .....	...	78·40	...	...
" "	183—185, Bell Barn Road .....	...	167·60	...	...
" "	35 Court, Irving Street (Diphtheria) ...	...	157·60	...	...
" "	36 Court, Irving Street (Diphtheria) ...	...	159·60	...	rather large
" 23rd	3 Court, Guildford Street .....	...	94·80	...	"
" "	20 Court, Wheeler Street .....	...	280·40	...	very large
" "	8—12, Spark Street (Typhoid).....	...	169·40	...	excessive
" "	10—13, Priestley Road.....	...	141·60	...	very large
" "	14—17, Priestley Road.....	...	95·60	...	"
" "	34 and 35, Highgate Lane (Diarrhoea) ...	...	117·60	...	rather large
" 26th	204 and 205, Cooksey Road.....	...	68·80	...	very large
" "	208 and 209, Cooksey Road.....	...	96·40	...	"
" "	212 and 213, Cooksey Road.....	...	94·40	...	large
" "	216 and 217, Cooksey Road.....	...	71·60	...	very large
" "	2 Court, Bradford Street .....	...	124·40	...	...
" "	108 and 109, Sherlock Street (Fever) ...	...	149·60	...	very large
Dec. 1st	31, Main Street .....	...	128·80	...	"
" "	32—36, Main Street.....	...	158·40	...	large
" "	111—113, Muntz Street (Diphtheria) ..	...	124·40	...	small
" "	114 and 115, Muntz Street (Diphtheria) ...	...	116·60	...	"
" "	21, Hawkes Street.....	...	35·60	...	rather large
" "	47, Chapman Road .....	...	152·60	...	...
" 6th	22—24, Hawkes Street.....	...	139·80	...	...
" "	30—32, Hawkes Street.....	...	142·40	...	very large
" "	20 and 21, Witton Street (Diarrhoea) ...	...	233·40	...	"
" "	85 and 86, Aston Street .....	...	183·60	...	rather large
" "	209 and 210, Coventry Road.....	...	69·60	...	"
" "	1 and 2, Oswald Villas, Langley Road ...	...	83·60	...	large
" 10th	170 and 171, Cooksey Road .....	...	110·80	...	"
" "	172 and 173, Cooksey Road (Sore Throat) ...	...	114·40	...	excessive
" "	174 and 175, Cooksey Road.....	...	125·40	...	"
" "	176, Cooksey Road .....	...	137·60	...	...
" "	5 Court, Angelina Street .....	...	109·60	...	large

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contam- ination. (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempo- rary.	Perman- ent.	Total.	
.410	7.70	8.038	80060	16.6	...	...	...	Clear
.380	8.36	8.673	86410	18.2	...	...	...	Clear
.300	11.22	12.390	123580	6.2	...	...	...	Clear
.210	3.74	3.913	38810	16.5	...	...	...	Clear
.800	6.71	7.370	73380	12.3	...	...	...	Clear
.003	7.26	7.262	72300	12.1	...	...	...	Clear
.005	6.60	6.604	65720	10.5	...	...	...	Clear
.800	7.48	8.140	81180	43.2	...	...	...	Clear
.005	3.52	3.524	34920	8.2	...	...	...	Clear
.012	5.06	5.070	50380	8.6	...	...	...	Clear
.004	3.85	3.853	38210	5.6	...	...	...	Clear
.003	2.42	2.422	23900	2.4	...	...	...	Clear
.510	3.52	3.940	39080	16.3	...	...	...	Clear
.060	3.30	3.349	33170	19.0	...	...	...	Clear
.850	6.38	7.081	70490	23.1	...	...	...	Clear
.009	6.82	6.827	67950	7.2	...	...	...	Clear
.150	.11	.233	2010	5.9	...	...	...	Clear
.490	4.18	4.584	45520	29.3	...	...	...	Clear
.470	6.82	7.207	71750	23.4	...	...	...	Clear
.005	6.27	6.274	62420	21.0	...	...	...	Clear
.009	2.64	2.647	26150	11.1	...	...	...	Clear
.007	9.90	9.905	98730	29.2	...	...	...	Clear
.008	8.03	8.036	80040	12.5	...	...	...	Clear
.004	5.83	5.833	58010	14.2	...	...	...	Turbid, with many large floating particles
.003	4.84	4.842	48100	2.1	...	...	...	Clear
.002	2.64	2.641	26090	12.2	...	...	...	Slightly turbid
.007	1.98	1.985	19520	2.6	...	...	...	Clear
.006	4.18	4.185	41530	4.5	...	...	...	Clear
.005	3.19	3.194	31620	4.3	...	...	...	Clear
.003	.66	.662	6300	3.4	...	...	...	Clear
.045	1.54	1.577	15450	8.6	...	...	...	Clear
.005	3.19	3.194	31620	19.0	...	...	...	Clear
.007	4.84	4.845	48130	8.1	...	...	...	Clear
.003	6.93	6.932	69000	16.7	...	...	...	Clear
.003	4.62	4.623	45910	9.4	...	...	...	Clear
.003	3.52	3.522	34900	9.3	...	...	...	Clear
.004	.22	.223	1910	2.6	...	...	...	Clear
.500	7.70	11.820	117880	12.8	...	...	...	Clear
.240	4.40	4.597	45650	11.5	...	...	...	Clear
.005	5.50	5.504	54720	14.1	...	...	...	Clear
.005	10.89	10.894	108620	25.6	...	...	...	Clear
.004	8.03	8.033	80010	22.5	...	...	...	Clear
.005	2.86	2.864	28320	5.4	...	...	...	Clear
.002	2.09	2.091	20590	5.5	...	...	...	Clear
.004	3.30	3.303	32710	5.9	...	...	...	Clear
.004	3.85	3.853	38210	6.8	...	...	...	Clear
.007	5.61	5.615	55830	9.1	...	...	...	Clear, residue yellowish
.250	6.82	7.026	69940	14.0	...	...	...	Clear
.004	1.21	1.213	11810	6.1	...	...	...

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1880.	WELL WATERS.—(continued).				
Dec. 10th	7 Court, Angelina Street .....	...	99·60	...	modera
" 14th	36—43, Lowe Street.....	...	150·80	...	...
" "	63 and 64, Baker Street.....	...	121·40	...	rather large
" "	134—139, Grange Road (Scarlet Fever).....	...	63·40	...	modera
" "	17 Court, Highgate Street.....	...	85·60	...	...
" "	Angelina Terrace, Angelina Street, and Emily Terrace, Emily Street, top pump.....	...	130·60	...	rather large
" "	Back 1 to 5, Angelina Terrace, Angelina Street, and 111 to 115, Vaughton Street (Diarrhoea).....	...	130·60	...	"
" 16th	87 and 89, Dolobran Road (Diarrhoea) .....	...	70·80	...	modera
" "	91 and 93, Dolobran Road .....	...	56·40	...	"
" "	95—101, Dolobran Road .....	...	37·40	...	"
" "	79 and 81, Montgomery Street.....	...	63·60	..	rather large
" "	Back 94 and 95, Suffolk Street.....	...	175·60	...	"
" 21st	6 Court, Osler Street, (Typhoid) .....	...	74·80	...	"
" "	7 Court, Osler Street, (Typhoid) .....	...	64·40	...	larg
" "	Back 3 and 4, Eyre Street.....	...	155·40	...	moder
" "	121 and 123, Bordesley Park Rd. (Scarlet Fever) .....	...	77·60	...	"
" "	125 and 127, Bordesley Park Rd. (Scarlet Fever) .....	...	81·60	...	rather small
" "	137 and 139, Bordesley Park Rd. (Scarlet Fever) .....	...	85·60	...	moder
" 28th	4 Court, Lee Bank Road .....	...	94·80	...	rather l.
" "	5 Court, Lee Bank Road .....	...	92·40	...	"
" "	38—41, Lee Bank Road .....	...	119·40	...	...
" "	8 and 10, Summer Road .....	...	141·60	...	...
" "	5 Court, Woodcock Street (Scarlet Fever) .....	...	257·60	...	rather l.
" "	454 and 455, Coventry Road (Diphtheria) .....	...	119·60	...	...
" 31st	3 Court, Thomas Street (Scarlet Fever) .....	...	194·80	...	very l.
" "	4—8, Vaughton Street and 10—13, Darwin Street (Diarrhoea) .....	...	216·40	...	larg
" "	62, Kingston Road (Scarlet Fever) ...	...	107·40	...	very l.
" "	286, Coventry Road .....	...	171·60	...	larg
" "	287 and 288, Coventry Road .....	...	153·60	...	—
" "	289 and 290, Coventry Road .....	..	239·60	...	larg

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites	Total combined Nitrogen.	Previous Sewage or Animal Contamin- ation (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
.002	2.09	2.091	20590	5.4	...	...	...	Very turbid and muddy, brownish Clear Clear Clear
.016	6.27	6.283	62510	8.1	...	...	...
.004	3.84	3.843	38310	10.3	...	...	...
.003	1.21	1.212	11800	3.3	...	...	...
.320	.55	.813	7810	6.5	...	...	...	Clear
.004	3.30	3.303	32710	10.4	...	...	...	Clear
.003	4.18	4.182	41500	9.7	...	...	...	Clear
.003	2.09	2.092	20600	5.2	...	...	...	Clear
.003	.11	.112	800	2.1	...	...	...	Clear
.004	.99	.993	9610	2.3	...	...	...	Clear
.002	2.20	2.201	21690	3.1	...	...	...	Clear
.003	4.95	4.952	49200	37.2	...	...	...	Clear
.004	4.73	4.733	47010	8.9	...	...	...	Slightly turbid, some large floating particles Slightly turbid, some large floating particles
.004	2.20	2.203	21710	7.0	...	...	...
.016	3.74	3.753	37210	29.5	...	...	...	Clear
.002	.66	.661	6290	5.9	...	...	...	Clear
.005	.55	.554	5220	4.8	...	...	...	Clear
.003	.22	.222	1900	4.7	...	...	...	Clear
.007	2.20	2.206	21740	16.5	...	...	...	Clear
.005	3.85	3.854	38220	8.5	...	...	...	Clear
.065	6.82	6.873	68410	11.1	...	...	...	Clear
.025	5.72	5.740	57080	11.3	...	...	...	Clear
.004	2.09	2.093	20610	32.9	...	...	...	Clear
.019	4.40	4.416	43840	10.9	...	...	...	Clear
.004	6.38	6.383	63510	13.5	...	...	...	Clear
.002	4.18	4.181	41490	19.6	...	...	...	Clear
.005	1.10	1.104	10720	4.5	...	...	..	Clear
.003	9.02	9.022	89900	10.5	...	...	...	Clear
.120	4.40	4.499	44670	13.0	...	...	...	Clear
.003	9.24	9.242	92100	23.0	...	...	...	Clear

TABLE XVI.

RETURN FOR THE PERIOD 1ST JULY, 1879, TO 30TH JUNE, 1880, RESPECTING THE VACCINATION OF CHILDREN WHOSE BIRTHS WERE REGISTERED IN THE BOROUGH DURING THE SAID PERIOD.

PARISH.	Number of Births returned in the "Birth List Sheets" as Registered.	Number of these Births duly entered in Columns 10, 11, and 13 of the "Vaccination Register" (Birth List Sheets), viz. :					Number of these Births which remained unentered in the "Vaccination Register" on account (as shown by Report Book) of				Number of these Births remaining neither duly entered in the "Vaccination Register" (cols. 3, 4, 5, and 6 of this Return) nor temporarily accounted for in the "Report Book" (cols. 8, 9, and 10 of this Return).
		Col. 10.	Col. 11.		Col. 13.	Postponement by Medical Certificate.	Removal to Districts the Vaccination Officer of which has been duly appraised.	Removal to places unknown or which cannot be reached : and Cases not having been found.			
			"Successfully Vaccinated."	"Insusceptible of Vaccination"					"Had Smallpox"		
										"Dead, Unvaccinated."	
1		3	4	5	6	8	9	10	11		
Birmingham - - -	9,603	8,281	13	—	927	51	46	285	—		
Aston (within the Borough)	5,583	4,539	5	—	520	87	22	355	55		
Edgbaston (" ")	488	403	1	—	40	11	7	9	17		

Table of the Number of Deaths occurring in each Street in the Borough of
Birmingham during the Year 1880.

STREETS.			STREETS.			STREETS.		
	Zymotic Diseases	Other Diseases		Zymotic Diseases	Other Diseases		Zymotic Diseases	Other Diseases
A			Bath Street	5	3	C		
Abberley Street		2	Bench Street	3	6	Calthorpe Road		5
Abbey Street	3	3	Beak Street	2	2	Cambridge Crescent	1	
Aberdeen Street	2	14	Beatrice Creseent			Cambridge Street		1
A. B. Row.. ..		1	Beaufort Road		4	Camden Drive		2
Adam Street	5	13	Bedford Road	3	2	Camden Grove		
Adderley Street	5	8	Beechfield Road		1	Camden Street		41
Adelaide Street, Deritend	3	11	Belgrave Road	1	11	Camp Hill.. ..	3	10
Adelaide St., Duddeston		7	Bell Barn Road	9	32	Camp Street	1	4
Albert Road	2	3	Bellis Street	1	4	Canal Street	1	2
Albert Street, All Saints'	1	4	Bell Street.. ..		2	Cannon Street		1
Albert Street, St. Martin's		4	Belmont Passage		4	Cape Lane		
Albion Street		5	Belmont Row		2	Cape Street		
Alcester Street	1	15	Benaere Street	9	19	Cardigan Street	4	11
Alexandra Road		1	Bennett's Hill		2	Carlisle Road		
Alexandra Street	1	8	Berkeley Street			Carlisle Street, All Saints'		3
Alfred Street		2	Berner's Street	1	4	Carlisle St., Duddeston.. ..	1	
Allecock Street	3	14	Beswick Street			Caroline Street		3
Allen Street	1	2	Betholom Row		1	Carpenter Road		1
Allesley Street	1	1	Birehall Street	2	5	Car's Lane		
Allison Street	6	18	Bird Lane		1	Cartland Road		
All Saints' Road		3	Bishopgate Street	5	16	Carver Street	1	10
All Saints' Street		1	Bishop St Masshouse Lane	3	11	Castle Street, St. Martin		1
Alma Crescent	1	2	Bishop St., Moseley St.	2	2	Castle Street, Deritend.. ..		
Alma Street			Bishop Street South	2	2	Catheart Street	3	6
Alston Street	1	8	Bissell Street	4	12	Cato Street	2	11
Ampton Road		1	Blake Lane			Cato Street North		8
Anderton Road	1	1	Blews Street		12	Cattell Road	3	23
Anderton Street		2	Blews Street West	2	4	Cattell Grove		2
Andover Street			Bloomsbury	3	12	Cecil Street	4	9
Angelina Street	7	19	Bloomsbury Street	1	21	Centre Row		
Ann Street		1	Bluelier Street	1	10	Chad Road		3
Argyle Street		2	Bolton Road	4	17	Chapel House Street		
Armoury Road			Bolton Street	2	3	Chandos Road		4
Arsenal Street	1	2	Bond Street		1	Chapel Street		1
Arthur Road	3	6	Bordesley Green	1	11	Chapman Road		
Arthur Street	4	12	Bordesley Green Road			Charles Arthur Street	4	13
Ashted Row	1	9	Bordesley Park Road	4	24	Charles Henry Street	8	40
Aston Brook Street			Bordesley Street	9	22	Charlotte Road		2
Aston Road	5	31	Bow Street	3	6	Charlotte Street	1	
Aston Street	1	6	Bowyer Street		2	Chattaway Street		2
Asylum Road	1	5	Braacebridge Street	1	10	Cheapside	9	21
Athole Street			Bradford Street	3	27	Cheatham Street		5
Atlas Street			Braithwaite Road		1	Checquer's Walk.. ..		
Auckland Road	1	5	Branstown Street	1	7	Cherry Street		
Augusta Street		2	Brasshouse Passage			Cherry Wood Lane		
Augustus Road		1	Brass Street	1	3	Chester St., Ladywood	3	17
Austin Street		3	Bread Lane			Chester St., Duddeston		3
Avenue Road			Bread Street, Livery St.		2	Cheston Road		
B			Bread St., Gt. Queen St.	3		Christ Church Passage		
Bacchus Road	1	5	Brearley Street	8	27	Church Road, All Saints'		
Bagot Street	1	9	Brearley Street West	5	18	Church Road, Duddeston		3
Bailey Street	1		Brewery St., Deritend			Church Road, Edgbaston		2
Baker Street		3	Brewery St., St. George's	1	7	Church Street		2
Balloon Street			Brewery St., Duddeston	2	6	Clarendon Road		1
Balsall Heath Road		3	Brickiln Street	2	1	Clark Street	5	23
Balsall Street	1	1	Bridge Road			Claverdon Street.. ..	3	6
Banbury Street	1	2	Bridge Street, All Saints'	1		Claybrook Street.. ..		1
Barford Road		2	Bridge Street, St. Thomas	1		Clement Street	3	6
Barford Street	7	16	Bridge Street West	5	20	Cleve Terrace		
Barford Street South	5	11	Bristol Road	2	10	Clissold Street	2	3
Barker Street		4	Bristol Street		16	Cliveland Street		
Barlow's Road			Broad Street	3	20	Coach Yard		2
Barn Street	3	22	Bromsgrove Street	4	30	Coleman Street	4	9
Barrack Street		1	Brookfield Road			Coleshill Street	3	15
Barr Street	1	20	Brook Road			College Street	2	5
Barr Street West.. ..	1	4	Brook Street	1	4	Colmore Row		2
Bartholomew Row		4	Broom Street			Commercial Street		1
Bartholomew Street	2	8	Brueton's Street			Communication Row	2	5
Barwell Road		2	Buckingham Street	2	5	Congreve Street		2
Baskerville Passage			Buck Street			Constitution Hill	1	9
Baskerville Place	1		Bullock Road	1		Conybere Street	6	14
Bath Passage	1		Bullock Street			Cooksey Road		21
Bath Row	9		Bull Ring	1	2	Cope Street	1	8
			Bull Street		3	Coplow Street	5	1
			Burbury Street	2	8			
			Butler Street	1	8			
			Butler Street South					

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
Cotton Street ..	1	3	Farm Road ..	..	..	Greaves' Court ..	..	1
Courthouse Road ..	..	..	Farm Street ..	..	41	Greenfield Crescent ..	..	24
Coventry Road ..	5	40	Farnham Road ..	..	1	Green Lane ..	..	..
Coventry Street ..	12	8	Fawdry Street ..	..	3	Green's Court ..	..	..
Cox Street ..	..	..	Fazeley Street ..	..	3	Green Street, Deritend ..	1	8
Coxwell Road ..	..	..	Fisher Street ..	..	4	Green Street, All Saints ..	1	7
Crabtree Road ..	1	5	Fleet Street ..	..	5	Green's Village ..	1	9
Crane Lane ..	..	1	Floodgate Street ..	..	14	Greenway Street ..	1	18
Cregoe Street ..	..	20	Florence Street ..	..	3	Grindstone Road ..	..	2
Crescent ..	..	5	Fordrough Lane ..	..	15	Grosvenor Row ..	..	1
Crescent Wharf ..	..	..	Fordrough Street ..	..	11	Grosvenor Street ..	..	1
Cromwell Street ..	11	36	Ford Street ..	..	..	Grove Road ..	..	1
Crooked Lane ..	..	2	Forge Street ..	..	1	Grosvenor Street West ..	3	21
Cross Street ..	..	2	Foundry Road ..	..	..	Grove Street ..	..	..
Cuckoo Road ..	..	7	Fowler Street ..	..	..	Guest Street ..	1	5
Cumberland Street ..	..	..	Fox Street ..	..	3	Guildford Street ..	3	7
Curzon Street ..	3	1	Francis Road ..	..	5	Gullet, St. Mary ..	..	..
Cuthbert Road ..	..	..	Francis Street ..	..	20	Gullet, Deritend ..	..	..
D			Frankfort Street ..	..	3	Gullet, St. Thomas ..	..	..
Dale End ..	1	3	Franklin Street ..	..	1	H		
Dart Street ..	1	3	Frank Street ..	..	3	Hagley Road ..	1	12
Dartmouth Street ..	9	24	Frederick Road ..	..	1	Hall Hill Road ..	..	..
Darwin Street ..	7	24	Frederick Street ..	..	4	Hall Street ..	1	2
Dawson Street ..	..	1	Freeman Road ..	..	1	Hampton Street ..	2	11
Dean Street ..	..	2	Freeman Street ..	..	1	Handsworth New Road ..	..	2
Dearman Road ..	..	2	Freeth Street ..	..	7	Hanley Street ..	1	7
Denbigh Street ..	..	..	Friston Street ..	..	5	Hanover Street ..	..	3
Derby Street ..	..	..	G			Harborne Road ..	..	4
Devon Street ..	1	7	Galton Street ..	..	3	Harding St., St. George's ..	1	5
Devonshire Street ..	1	5	Garbett Street ..	..	12	Harding Street, All Saints ..	2	2
Digbeth ..	..	14	Garrison Lane ..	..	26	Harford Street ..	..	3
Digby Street ..	3	5	Garrison Street ..	..	6	Harrison's Road ..	..	..
Dixon Road ..	..	1	Gas Street ..	..	..	Hatchett Street ..	3	16
Doe Street ..	..	8	Geach Street ..	..	7	Hawkes Street ..	2	5
Dolobran Road ..	3	2	Gee Street ..	..	1	Heathfield Terrace ..	..	1
Dolman Street ..	3	4	Gem Street ..	..	5	Heath Mill Lane ..	1	25
Drury Lane ..	..	5	George Road ..	..	3	Heath Street ..	13	28
Duchess Road ..	..	..	George Street (All Saints) ..	..	4	Heath Street South ..	1	..
Duddeston Mill Road ..	2	9	George Street, Nechells ..	..	3	Heaton Street ..	10	13
Duddeston Row ..	4	7	George Street West ..	1	21	Helena Street ..	..	..
Dudley Road ..	2	14	Gibb Street ..	..	1	Hemage Street ..	8	34
Dudley Street ..	1	6	Gillott Road ..	..	..	Henley Street ..	2	5
Dugdale Street ..	1	4	Gladstone Road ..	..	..	Henn Street ..	..	1
Duke Street ..	1	11	Glebe Passage ..	..	1	Henn's Walk ..	..	1
Dymoke Street ..	2	16	Glebe Street ..	..	3	Henrietta Street ..	..	6
E			Gloucester Street ..	..	2	Henry Street ..	2	18
Eastern Road ..	..	..	Glover's Road ..	..	7	Herbert Road ..	1	14
Easy Row ..	..	..	Glover's Street ..	..	14	Hermitage Road ..	..	..
Eden Place ..	..	..	Godwin Street ..	..	5	Hickman Road ..	..	1
Edgbaston Road ..	..	..	Golden Hillock Road ..	..	7	Hick Square ..	..	..
Edgbaston Street ..	..	3	Gooch Street ..	10	21	Hick Street ..	3	8
Edmund Street ..	..	3	Goode Street ..	..	5	Highfield Road ..	..	2
Edward Road ..	..	..	Goodman Street ..	..	..	Highgate Lane ..	3	5
Edward Street ..	..	13	Goodrick Street ..	..	1	Highgate Place ..	..	1
Elkington Street ..	..	..	Gopsall Street ..	..	3	Highgate Street ..	4	26
Ellen Street ..	2	18	Gosta Green ..	..	2	High Park Street ..	1	2
Ellis Street ..	..	6	Gough Road ..	..	5	High Street ..	1	4
Elvetnam Road ..	..	1	Gough Street ..	..	5	High Street, Deritend ..	8	32
Emily Street ..	4	24	Grace Road ..	..	..	High Street, Bordesley ..	..	..
Emmeline Street ..	1	2	Grafton Road ..	..	..	Hill Street ..	3	8
Enfield Road ..	..	..	Graham Street ..	2	3	Hingeston Street ..	5	27
Engine Street ..	..	1	Grange Road ..	..	2	Hob Moor Lane ..	..	..
Erasmus Road ..	..	11	Grantham Road ..	..	1	Hockley Hill ..	..	10
Ernest Street ..	..	..	Grant Street ..	..	5	Hockley Pool Road ..	..	..
Essex Street ..	2	6	Granville Street ..	..	7	Hockley Street ..	2	9
Essington Street ..	4	11	Great Barr Street ..	..	10	Holborn Hill ..	1	6
Ethel Street ..	..	..	Great Brook Street ..	..	19	Holland Street ..	..	..
Exeter Row ..	..	4	Great Charles Street ..	..	10	Holliday Street ..	2	9
Eyre Street ..	..	1	Great Colmore Street ..	..	22	Hollier Street ..	..	3
F			Great Francis Street ..	13	23	Holloway Head ..	2	7
Factory Road ..	1	..	Great Hampton Row ..	13	20	Holly Road ..	..	..
Falconer Road ..	..	2	Great Hampton Street ..	..	13	Holt Street ..	2	16
			Great King Street ..	5	12	Hooper Street ..	2	2
			Great Lister Street ..	9	20	Hope St. (St. Martin's) ..	5	25
			Great Queen Street ..	..	1	Hope Street (All Saints) ..	..	..
			Great Russell Street ..	5	27	Horse Fair ..	..	..
			Great Tindal Street ..	2	8	Hospital Street ..	5	22
						Howard Place ..	..	..
						Howard Street ..	1	5
						Howe Street ..	1	12
						Hubert Street ..	1	1
						Humpage Road ..	..	2

STREETS.			STREETS.			STREETS.		
	Zymotic Diseases	Other Diseases		Zymotic Diseases	Other Diseases		Zymotic Diseases	Other Diseases
Hunter's Lane	1	11	Lees Street	1	1	Meriden Street	3	6
Hunter's Vale	1	11	Legge Lane	1	4	Metehley Lane	4	4
Hurst Street	2	3	Legge Street	2	9	Metehley Park Road	5	7
Hutton Street	2	3	Lench Street	7	8	Miles Street	1	7
Hyde Road	3	3	Lennox Street	1	7	Milk Street	1	4
Hylton Street	1	1	Leopold Street	1	4	Miller Street	1	12
			Lieffield Street	2	9	Mill Lane	1	5
			Lilly Green	3	6	Mill Street, Duddleston	1	2
			Lingard Street	3	4	Mill Street, Ladywood	1	12
			Lionel Street	3	3	Milton Road	1	5
			Lister Street	1	1	Milton Street	1	2
			Little Ann Street	1	1	Milward Street	1	2
			Little Barr Street	1	1	Minorities	1	2
			Little Bow Street	1	1	Moat Lane	1	2
			Little Broom Street	1	1	Moat Row	1	2
			Little Cannon Street	1	1	Molliett Street	1	1
			Little Cherry Street	1	1	Moland Street	1	8
			Little Edward Street	1	1	Mole Street	4	10
			Little Fawdry Street	1	2	Mona Road	2	2
			Little Francis Street	4	12	Mommouth Street		
			Little Green Lane	3	3	Montague Road		
			Little Hampton Street	1	1	Montague Street	1	1
			Little Hill Street	1	8	Montgomery Street	1	3
			Little King Street	1	8	Montpellier Street	1	3
			Little Shadwell Street	1	8	Monument Road	5	30
			Little Wright Street	2	3	Moore's Row	1	1
			Liverpool Street	3	8	Moor Street	2	13
			Livery Street	4	22	Moreton Street	1	2
			Lloyd Street	3	14	Morville Street	4	13
			Lodge Road	5	12	Moseley Road	9	20
			Lombard Street	4	10	Moseley Street	5	16
			Lombard Street	5	12	Mott Street		6
			London 'Prentice Street	10		Mountfield Road		
			Long Acre	5		Mount Pleasant, Cov. Rd.		1
			Longmore Street	4		Mount " Moseley Rd.		
			Long Street	5		Mount Street, Newhall St		
			Lord Street	12		Mount Street, Deritend		7
			Louisa Street	3		Mount St., Winson Green		3
			Loveday Street	9		Mount Street, Neehells		5
			Love Lane	2		Musgrave Road		5
			Lower Camden Street	1		Muntz Street		14
			Lower Dartmouth Street	2				
			Lower Darwin Street	1				
			Lower Essex Street	16				
			Lower Fazeley Street	2				
			Lower Hospital Street	8				
			Lower Hurst Street	12				
			Lower Hurst Street East					
			Lr. King Edward's Rd.	3				
			Lower Lawley Street					
			Lower Lawrence Street					
			Lower Loveday Street					
			Lower Pershore Street	2				
			Lower Priory	1				
			Lower Russell Street	1				
			Lowe Street	2				
			Lower Temple Street					
			Lower Tower Street	14				
			Lower Trinity Street	8				
			Lower Witton Street					
			Lower Windsor Street	1				
			Lowe Street					
			Loxton Street	3				
			Ludgate Hill	8				
			Ludgate Hill Passage					
			Lupin Street	17				

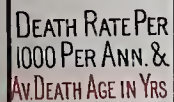
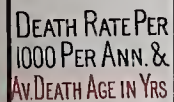
STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
Northwood Street ..	1	11				St. Peter's Place ..		2
North Street ..						St. Philip's Churchyard ..		
Norton Street ..	2	3				St. Stephen's Street ..		
Nova Scotia Street ..	4	4	R			St. Vincent's Street ..	3	13
Nursery Road ..						Scholefield Street ..	3	14
						Scotland Passage ..		
O						Scotland Street ..	1	1
			Radnor Street ..			Scott Street ..		
Oakley Road ..	2	1	Railway Terrace, Ddston ..	1	6	Severn Street ..		4
Old Cross Street ..	1	12	Railway Terrace, Nech'lls ..	1	4	Seymour Street ..		
Old Inkleys ..	2	1	Rann Street ..	4	4	Shadwell Street ..	1	5
Old Meeting Street ..			Ratcliffe Place ..			Shakespeare Road ..	3	6
Old Square ..			Ratcliffe Street ..	1	1	Sheepcote Lane ..		5
Oliver Road ..			Ravenhurst Street ..			Sheepcote Street ..	3	13
Oliver Street ..	1	1	Rawlins Street ..	1	5	Sheep Street ..	1	15
Oozells Street ..			Rea Street ..	2	11	Sherborne Street ..	4	20
Oozells Street North ..			Rea Street South ..	1	5	Sherlock Street ..	9	20
Ormond Street ..	2	5	Regent's Parade ..			Shutt Lane ..		
Osler Street ..	5	15	Regent Park Road ..	1	3	Silver Street ..		2
Oughton Place ..			Regent Place ..	1	2	Sir Harry's Road ..		1
Outlet Road ..			Regent Row ..			Skinner Lane ..	2	3
Owen Street ..	1	4	Regent Street ..			Skinner Street ..		1
Oxford Street ..	2	3	Reservoir Retreat ..			Slaucy Street ..		9
Oxygen Street ..			Reservoir Road ..			Sloe Lane ..		
P			Richard Street, St. Paul's ..			Smallbrook Street ..		9
			Richard St., Nechells ..			Smithfield Passage ..		3
Paddington Street ..	1	9	Richmond Hill Road ..			Smithfield Street ..		
Pakenham Road ..			River Street ..			Smith St., St. George's ..	1	17
Palmer Street ..	3	11	Robert Road ..			Smith Street, Duddeston ..		3
Parade ..	1	7	Rocky Lane ..			Snape Street ..		3
Paradise Street ..			Robert Road ..			Snow Hill ..		4
Parker Street ..	1	14	Rodway Street ..			Soho Road ..	2	4
Park Lane ..			Rope Walk ..	1		Somerset Road ..		
Park Road, All Saints' ..	3	38	Rotton Park Road ..			Somerset Street ..		5
Park Road, Edgbaston ..			Rotton Park Street ..			South Road ..	1	5
Park Street ..	2	2	Rowland Street ..	3	4	Spark Street ..		4
Parliament Street ..			Rupert Street ..	2	9	Speaking Stile Walk ..		1
Paternoster Row ..			Russell Street ..	2	4	Speedwell Road ..		2
Paxton Road ..	2	1	Ruston Street ..	1	5	Spencer Street ..		6
Pebble Mill Road ..			Ruston Street North ..	4	20	Spiceal Street ..		
Peel Street ..	1	8	Ryland Road ..			Spon Terrace ..		
Penn Street, Deritend ..	1	7	Ryland Street, Deritend ..			Spooner Street ..		1
Penn Street, Duddeston ..			Ryland St., Ladywood ..	1	7	Springfield Street ..	1	5
Pershore Road ..			Ryland Street North ..			Spring Hill ..	3	14
Pershore Street ..	1	7				Spring Hill Passage ..	1	1
Phillip's St., St. Martin ..	2	5	S			Spring Street ..		1
Phillip's St. St. George's ..	3	4	Salop Street ..			Spring Road ..		9
Pickford Street ..			Saltley Road ..	2	8	Spring Vale ..		
Piddock Street ..			Saltley Street ..	2	4	Statford Street ..	1	9
Pigott Street ..			Sampson Road ..			Staniforth Street ..	2	17
Pinfold Street ..			Sampson Road North ..			Stammore Road ..		
Pitney Street ..			Sand Pits ..			Stanley Road ..		
Pitsford Street ..	1	1	Sand Street ..			Station Road ..		
Plough and Harrow Road ..			Sandon Road ..			Steelhouse Lane ..	5	18
Pope Street ..	5	13	Sandy Lane ..	5	11	Station Street ..		
Poplar Avenue ..			Sarah Street ..			Stephenson Place ..		
Porchester Street ..			St. Augustine's Road ..			Stephenson Street ..		6
Port Hope Road ..	2	3	St. Andrew's Road ..	4	10	Steward Street ..		7
Portland Road ..			St. Clement's Road ..			Stewart Street ..	1	8
Potter Street ..	1	3	St. George's Crescent ..			Stirling Road ..		
Poultry ..			St. George's Street ..	5	13	Stoke Street ..	4	13
Powell Street ..			St. George's Place ..	2	3	Stone Yard (Deritend) ..		2
Prescott Street ..	2	18	St. George's Terrace ..			Stone Yard (Edgbaston) ..		
Price Street ..	6	5	St. James' Place ..			Stoney Lane ..		
Priestley Road ..			St. James' Road ..			Stour Street ..	2	10
Primrose Hill ..			St. James' Street ..	1		Stratford Place ..		1
Princes Row ..	1	3	St. Luke's Road ..	3	16	Stratford Road ..		10
Princes Street ..			St. Luke's Street ..			Stratford Street ..	1	3
Princess Road ..			St. Mark's Street ..			Suffolk Street ..	3	20
Princep Street ..			St. Mark's Street West ..	2	9	Summerfield Road ..		
Priory Road ..			St. Martin's Lane ..			Summer Hill ..		8
Pritchett's Lane ..			St. Martin's Place ..	1	1	Summer Hill Street ..		5
Pritchett Street ..	6	19	St. Martin's Row ..			Summer Hill Terrace ..		
Proctor Street ..	1	5	St. Martin's Street ..			Summer Lane ..	8	20
Prospect Row ..			St. Mary's Row ..			Summer Road ..		8
			St. Mary's Street ..	1	2	Summer Row ..		1
			St. Paul's Square ..	1	1	Summer St., St. Martin's ..		1
						Summer St., St. Phillip's ..		
						Sun Street ..	2	4
						Sun Street West ..	1	5
						Sutton Street ..		
						Swallow Street ..		
						Swan Passage ..		
						Sydenham Road ..		

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
T			Vauxhall Road	2	14	Winson Green Road ..	1	10
Talbot Street		9	Vauxhall Street		3	Winson Street	1	6
Talfourd Street	3	4	Vere Street	1	7	Witton Street	2	4
Tanter Street		7	Viearage Road		1	Woodbourne Road ..		
Taylor Street	4	6	Victoria Grove		1	Woodcock Street ..		10
Temple Field Street ..		7	Victoria Street		1	Wood Street, St. Thomas'		2
Temple Row			Villa Street	2	10	Wood Street, Ladywood		
Temple Row West ..			Villicers Street		2	Worcester Street ..		
Temple Street			Vine Street		1	Worcester Wharf ..		3
Tenby Street		2	Vittoria Street	1	2	Wordsworth Road ..	1	4
Tenby Street North ..		1	Vyse Street		3	Wrentham Street ..	1	20
Tennant Street	2	14	W			Wright Street	1	7
Theodore Street	1	9	Walter Street	3	2	Wrottesley Street ..	1	
Theresa Road		3	Ward Street	2	11	Wyndcliffe Road ..	1	3
Thimble Mill Lane ..		5	Warner Street	1	2	Wyndham Road ..		
Thomas St., St. Mary's	2	4	Warstone Lane		2	Wynn Street	1	13
Thomas Street, Deritend		3	Warstone Parade ..			X		
Thorp Street	1	4	Warwick House Passage			Y		
Tillingham Street ..		3	Warwick Street	6	10	Yardley Road		2
Tindal Street	2	8	Washington Street ..	1	12	Yew Tree Ter., Nechells		
Tonk Street			Waterloo Street		1	Yew Tree Road		
Tower Street	3	12	Water Street	2	6	York Passage		
Trafalgar Road		3	Waterworks Road ..		4	York Road		3
Trent Street		6	Watery Lane	9	23	York Street		
Trinity Terrace			Watts Road			Z		
Turner Street		8	Weaman Row			ADDENDA.		
Tyndall Street	2	12	Weaman Street	1	13	Birmingham and Fazeley		
U			Wellesley Street ..		2	Canal		3
Unett Street	8	22	Wellington Passage ..			Old Birmingham Canal		2
Union Passage		2	Wellington Street, Lady'd			Great Western Railway..		1
Union Street		1	Wellington Road ..		5	AT INSTITUTIONS.		
Union Terrace			Wellington Street ..	2	6	General Hospital ..	9	207
Upper Dean Street ..		2	Well Lane, Edgbaston..	1		Queen's Hospital ..		131
Upper Gough Street ..	1	4	Well Street		3	Children's Hospital ..	15	39
Upper Highgate Street		3	Well Street, St. Martin's	5	15	Workhouse	16	471
Upper Hockley Street ..	1	5	Westbourne Road ..		1	Asylum	1	89
Upper Hospital Street ..	5	18	Western Road			Gaol		
Upper Marshall Street ..		1	Westfield Road	2	8	Borough Hospital ..	15	2
Upper Mill Lane ..	1		Westley Street	1	4	Homœopathic Hospital ..		11
Upper Priory		1	Weston Street	1	1	TOTALS		
Upper Ryland Road ..		13	Wharf Lane				1324	6764
Upper Tower Street ..	1	1	Wharf St., St. Thomas'	1	8	Grand Total ...		
Upper Trinity Street ..	6	5	Wharf Street, Deritend..	3	5			8,088
Upper Windsor Street ..			Wharf Street, Duddeston		2			
Upper Tower Street ..			Wharf Street, All Saints'		2			
V			Wharton Street					
Vale Street		2	Wheeler Street	6	13			
Varna Road	2	4	Wheley's Lane		3			
Vaughton Street	6	19	Wheley's Road		3			
Vaughton Street South ..	1	1	White Lion Passage ..					
Vauxhall Grove		1	White Road	3	12			
			Whitmore Road		3			
			Whitmore Street		7			
			Whittall Street	1	2			
			Wiggin Street					
			William Edward Street	1	6			
			William Henry Street ..		1			
			William St., St. Thomas'	4	24			
			William Street, Deritend					
			William Street North ..	2	5			
			Willis Street		7			
			Wilton Street	1	2			
			Windmill Hill					
			Windmill Street	3	6			
			Windsor Street	2	21			

Grand Total ... 8,088

DEATH RATE PER
1000 PER ANN. &
AV. DEATH AGE IN YRS

DEATH RATE PER
1000 PER ANN. &
AV. DEATH AGE IN YRS



REPORT
ON
ADULTERATION.

BOROUGH ANALYST'S LABORATORY,

THE COUNCIL HOUSE,

Birmingham, March 15th, 1881.

TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

I have the honour to report that during last year, in accordance with the requirements of the "Sale of Food and Drugs Bill," I analysed 178 samples of food and drink, nearly all of which were submitted to me by the Inspector of Nuisances. The nature of the articles, the analytical results, and other particulars are appended :—

No.	DATE.—1880.	ARTICLES.	REMARKS.
831—	Jan. 6th ...	Milk	Adulterated with 25 % of water.
832—	" 29th ...	Milk..	Adulterated with 7·8 % of water.
833—	" 29th ..	Milk..... ..	Adulterated with 10 % of water. Fined 5s. and Costs.
834—	" 29th ..	Milk..... ..	Adulterated with 3·5 % of water, and deprived of one-half of its Cream. Fined 5s. and Costs.
835—	" 29th ...	Milk..... ..	Adulterated with 10 % of water. Fined 5s. and Costs.
836—	Feb. 12th ...	Milk..... ..	Genuine.
837—	" 12th ...	Milk..... ..	Adulterated with 20 % of water. Fined £10 and Costs.
838—	" 17th ...	Milk..... ..	Genuine.
839—	" 17th ...	Milk..... ..	Nearly Genuine.
840—	" 17th ...	Milk..... ..	Adulterated with 4½ % of water.
841—	" 17th ...	Milk..... ..	Adulterated with 9 % of water. Fined 2s. 6d. and Costs.
842—	March 3rd ...	Beer	Genuine.
843—	" 3rd ...	Beer	Genuine.
844—	" 3rd ...	Beer	Genuine.
845—	" 3rd ...	Beer	Genuine.
846—	" 3rd ...	Beer	Genuine.
847—	" 3rd ...	Beer	Genuine.
848—	" 3rd ...	Milk..... ..	Adulterated with 6 % of water. Fined 2s. 6d. and Costs
849—	" 3rd ...	Milk..... ..	Adulterated with 11 % of water. Fined 5s. and Costs.
850—	" 3rd ...	Milk..... ..	Adulterated with 7·5 % of water. Fined 2s. 6d. and Costs.
851—	" 3rd ...	Milk..... ..	Nearly Genuine.
852—	" 3rd ...	Butter	Genuine.
853—	" 8th ...	Milk..... ..	Adulterated with 27·5 % of water, and deprived of one-fifth of its Cream Fined 40s. and Costs.
854—	" 8th ...	Milk..... ..	Deprived of one-fifth of its Cream. Cautioned by Health Sub-Committee.
855—	" 8th ...	Milk..... ..	Nearly Genuine.
856—	" 8th ...	Milk..... ..	Adulterated with 12 % of water. Fined 5s. and Costs.
857—	" 9th ..	Milk..... ..	Adulterated with 29 % of water.
858—	" 18th ...	Milk..... ..	Adulterated with 5 % of water. Cautioned by Health Sub-Committee.
859—	" 18th ..	Milk..... ..	Adulterated with 15 % of water, and deprived of one-third of its Cream. Fined 10s. and Costs.

No. DATE.—1880. ARTICLES.

REMARKS.

860—	Mar.	18th	..	Milk.....	Adulterated with 18 % of water. Fined £5 and Costs.
861—	"	18th	...	Milk.....	Deprived of one-fourth of its Cream.
862—	"	24th	...	Milk.....	Genuine.
863—	"	24th	...	Milk.....	Deprived of about 15 % of its Cream.
864—	"	24th	...	Bread	Genuine.
865—	"	24th	...	Bread	Genuine.
866—	"	24th	...	Bread	Genuine.
867—	"	24th	...	Bread	Genuine.
868—	"	30th	...	Tea	Genuine.
869—	"	30th	...	Tea	Genuine.
870—	"	30th	...	Tea	Genuine.
871—	"	30th	...	Tea	Genuine.
872—	"	30th	...	Tea	Genuine.
873—	"	30th	...	Tea	Genuine.
874—	April	21st	...	Milk.....	Genuine.
875—	"	21st	...	Milk.....	Adulterated with 16% of water. Fined 5s. and Costs.
876—	"	21st	...	Milk.....	Genuine.
877—	"	21st	...	Milk.....	Adulterated with 12% of water, and deprived of 8% of its cream. Fined 5s. and Costs.
878—	"	28th	...	Milk	Genuine.
879—	"	28th	..	Milk.....	Genuine.
880—	"	28th	...	Milk..	Genuine (nearly)
881—	"	28th	...	Milk.....	Genuine (nearly)
882—	May	19th	...	Milk.....	Genuine (nearly)
883—	"	19th	...	Milk	Genuine (nearly)
884—	"	19th	...	Milk.....	Genuine (nearly)
885—	"	19th	...	Milk.....	Genuine (nearly)
886—	"	25th	...	Flour	Genuine.
887—	"	25th	...	Flour	Genuine.
888—	"	25th	...	Flour	Genuine.
889—	"	25th	...	Flour	Genuine.
890—	"	25th	...	Flour	Genuine.
891—	"	25th	...	Flour	Genuine.
892—	"	25th	...	Flour	Genuine.
893—	"	25th	...	Flour	Genuine.
894—	"	25th	...	Flour	Genuine.
895—	"	25th	..	Flour	Genuine.
896—	"	25th	...	Flour	Genuine.
897—	"	25th	...	Flour	Genuine.
898—	June	4th	...	Tea	Genuine.
899—	"	4th	...	Tea	Genuine.
900—	"	4th	...	Tea	Genuine.
901—	"	4th	..	Tea	Genuine.
902—	"	4th	...	Tea	Genuine.
903—	"	4th	...	Tea	Genuine.
904—	"	4th	...	Tea	Genuine.
905—	"	4th	...	Tea	Genuine.
906—	"	4th	...	Coffee	Genuine.

No.	DATE.—1880.	ARTICLES.	REMARKS.
907—	June 11th ..	Coffee Genuine.	
908—	" 11th ...	Coffee Genuine.	
909—	" 11th ...	Coffee Genuine.	
910—	" 11th ...	Coffee Genuine.	
911—	" 11th ...	Coffee Genuine.	
912—	" 11th ...	Coffee Genuine.	
913—	" 11th ...	Coffee Genuine.	
914—	" 12th ..	Milk..... Genuine.	
915—	" 12th ..	Milk Genuine.	
916—	" 12th ...	Milk... .. Adulterated with 13% of water.	
917—	" 12th ...	Milk..... Genuine.	
918—	July 21st ..	Milk..... Deprived of $\frac{1}{8}$ th of its Cream. Cautioned by Health Sub-Committee.	
919—	" 21st ...	Milk..... Adulterated with 10 % of water. Fined 10s. and Costs.	
920—	" 21st ...	Milk..... Genuine.	
921—	" 21st ...	Milk..... Genuine.	
922—	" 29th ...	Coffee Genuine.	
923—	" 29th ...	Coffee Genuine.	
924—	" 29th ...	Coffee Genuine.	
925—	" 29th ...	Coffee Genuine.	
926—	" 29th ...	Coffee Genuine.	
927—	" 29th ...	Coffee Genuine.	
928—	" 29th ..	Coffee Genuine.	
929—	" 29th ...	Coffee Genuine.	
930—	Aug. 18th ...	Flour Genuine.	
931—	" 18th ...	Flour Genuine.	
932—	" 18th ...	Flour Genuine.	
933—	" 18th ...	Flour Genuine.	
934—	" 18th ...	Flour Genuine.	
935—	" 18th ..	Flour Genuine.	
936—	" 24th ...	Pepper..... Genuine.	
937—	" 24th ...	Pepper..... Genuine.	
938—	" 24th ...	Pepper..... Genuine.	
939—	" 24th ...	Pepper..... Genuine.	
940—	" 24th ...	Pepper..... Genuine.	
941—	" 24th ..	Pepper..... Genuine.	
942—	" 26th ...	Milk Adulterated with nearly 5 % of water, and deprived of $\frac{1}{8}$ th of its Cream.	
943—	" 26th ...	Milk..... Genuine (nearly).	
944—	" 26th ...	Milk..... Genuine.	
945—	" 26th ...	Milk..... Genuine (nearly).	
946—	Aug. 30th ...	Mustard ... Genuine.	
947—	" 30th ...	Mustard ... Genuine.	
948—	" 30th ...	Mustard ... Genuine.	
949—	" 30th ...	Mustard ... Genuine.	
950—	" 30th ...	Mustard ... Genuine.	
951—	" 30th ...	Mustard ... Genuine,	
952—	Sept. 2nd ...	Milk..... Genuine.	
953—	" 2nd ...	Milk..... Genuine.	

No.	DATE.—1880.	ARTICLES.	REMARKS.
954—	Sep. 2nd	Milk..	Adulterated with 13 % of water. Fined 5s. and Costs.
955—	" 2nd	Milk...	Genuine (nearly).
956—	" 6th	Milk.....	Genuine.
957—	" 6th	Milk.....	Adulterated with 5 % of water. Cautioned by Health Sub-Committee.
958—	" 6th	Milk.....	Genuine.
959—	" 6th	Milk....	Adulterated with 5 % of water. Cautioned by Health Sub-Committee.
960—	" 21st	Milk.....	Adulterated with 6 % of water. Cautioned by Health Sub-Committee.
961—	" 21st	Milk.....	Adulterated with 15 % of water. Fined 5s. and Costs.
962—	" 21st	Milk.....	Adulterated with 17 % of water. Fined 5s. and Costs.
963—	" 21st	Milk.....	Genuine (nearly).
964—	" 21st	Milk..	Genuine.
965—	Oct. 6th	Milk...	Adulterated with 11 % of water. Fine, 10s. and Costs.
966—	" 6th	Milk.....	Adulterated with 6½ % of water. Cautioned by Health Sub-Committee.
967—	" 6th	Milk.....	Adulterated with 10 % of water. Fine, 2s. 6d. and Costs.
968—	" 12th	Milk.....	Genuine.
969—	" 12th	Milk.....	Genuine (nearly)
970—	" 12th	Milk.....	Genuine.
971—	" 12th	Milk.....	Genuine.
972—	" 20th	Milk...	Genuine.
973—	" 20th	Milk.....	Genuine.
974—	" 20th	Milk.....	Adulterated with 16 % of water. Fine, 10s. and Costs.
975—	" 20th	Milk.....	Genuine.
976—	" 27th	Flour	Genuine.
977—	" 27th	Flour	Genuine.
978—	" 27th	Flour	Genuine.
979—	" 27th	Flour	Genuine.
980—	" 27th	Flour	Genuine.
981—	" 27th	Flour	Genuine.
982—	Nov. 3rd	White Pepper	Genuine.
983—	" 3rd	White Pepper	Genuine.
984—	" 3rd	White Pepper	Genuine.
985—	" 3rd	White Pepper	Genuine.
986—	" 3rd	White Pepper	Genuine.
987—	" 3rd	White Pepper	Genuine.
988—	" 18th	Milk.....	Genuine.
989—	" 18th	Milk.....	Genuine.
990—	" 18th	Milk	Genuine.
991—	Nov. 18th	Milk.....	Adulterated with 6 % of water. Cautioned by Health Sub-Committee.
992—	" 29th	Coffee	Genuine.
993—	" 29th	Coffee	Genuine.
994—	" 29th	Coffee	Genuine.
995—	" 29th	Coffee	Genuine.
996—	" 29th	Coffee	Genuine.
997—	" 29th	Coffee	Genuine.
998—	Dec. 3rd	Soda Water	Genuine and Pure.

No.	DATE.—1880.	ARTICLES.	REMARKS.
999—	Dec. 15th ...	Tea (Black) Genuine.	
1000—	" 15th ...	Tea (Black) Genuine.	
1001—	" 15th ...	Tea (Black) Genuine.	
1002—	" 15th ...	Tea (Mixed) Genuine.	
1003—	" 15th ...	Tea (Black) Genuine.	
1004—	" 15th ...	Tea (Black) Genuine.	
1005—	" 20th ...	Milk..... Genuine.	
1006—	" 20th ...	Milk Genuine.	
1007—	" 20th ...	Milk..... Genuine.	
1008—	" 20th ..	Milk..... Deprived of 20 % of its cream.	Cautioned by Health Sub-Committee.

The 178 samples analysed comprised—

82	samples of Milk
28	" " Flour
22	" " Coffee
20	" " Tea
12	" " Pepper
6	" " Beer
6	" " Mustard
1	" " Soda Water
1	" " Butter

Total ... 178 Samples.

Thirty-eight of the Milks, or more than 46 per cent., had either been adulterated with water or deprived of a portion of their cream. None of the other samples had, however, been tampered with.

The Summary annexed shows how beneficial the Sale of Food and Drugs Bill has been in suppressing adulteration during the last eight years :—

PROPORTION OF ADULTERATED ARTICLES PER 100 SAMPLES ANALYSED OF THE FOLLOWING COMMODITIES :—

Years.	Number of Samples Analy-sed.	Total Per-centage of Adul-teration	Percentage of Adulteration of undermentioned Articles.								
			Milk.	Bread and Flour.	Butter.	Gro-ceries	Wines.	Beer.	Spirits.	Drugs.	Other Articles
1873	87	65	75	0	0	87	—	—	—	100	100
1874	79	42	67	0	66	16	—	0	100	—	—
1875	73	38	55	0	—	36	100	—	—	25	—
1876	92	33	30	—	—	19	—	33	25	36	62
1877	176	40	58	0	—	12	—	21	36	26	31
1878	158	21	57	0	0	10	0	13	26	—	—
1879	163	25	60	0	0	5	—	16	—	—	0
1880	178	21	46	0	0	0	—	0	—	—	0

I remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D., F.I.C.,
Borough Analyst.

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